FISH-00870

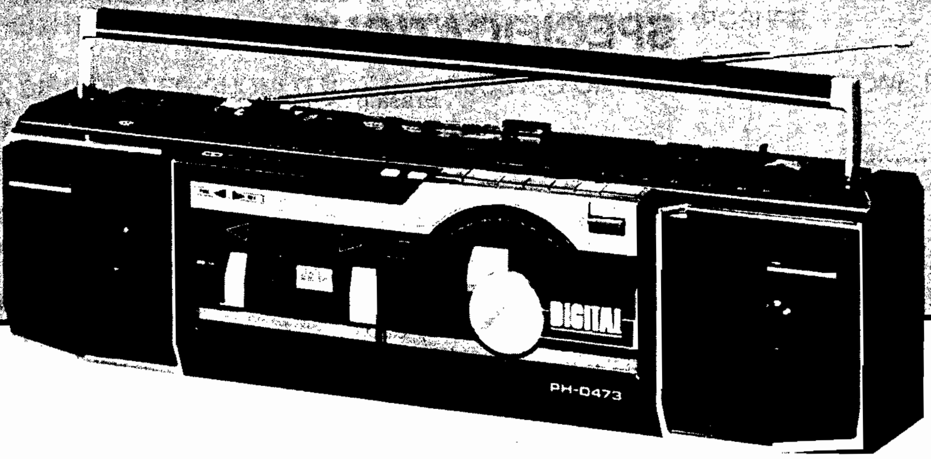
SERVICE MANUAL

FISHER®

PH-D473 F

U.S. Version

Stereo High Fidelity System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U.S.
WM-17867

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Schematic Diagram and Wiring Diagram are separately attached.

SPECIFICATIONS

GENERAL

Power Source	
AC	120V, 60Hz
DC	12V
Max. Output Power	4.0W x 2
Power Consumption	18W

CD

Frequency Response	20 ~ 20kHz
S/N Ratio	90dB
Wow and Flutter	Unmeasureable
Sampling Frequency	44.1kHz
Error Correction	CIRC
Optical Pickup	3-beam laser

TAPE

Current Consumption (at Vol. Min.)	
Record mode (with Metal)	270mA
Playback mode	160mA
Fast Forward mode	200mA
Rewind mode	200mA
Recording System	AC Bias
Erasing System	AC Erasing
Tape Speed	1-7/8ips. ±3%
Wow & Flutter	0.15% (WRMS)
Torque	
Playback	30 ~ 55g-cm
Fast Forward/Rewind	more than 55g-cm
Fast Forward/Rewind Time	140sec. (with C-60)
Frequency Response (Overall/DOLBY: OFF)	
Fe_2O_3	100Hz ~ 12,500Hz
Erase Ratio (Overall, with Fe_2O_3)	60dB
Signal to Noise Ratio (with Fe_2O_3)	43dB
Crosstalk (with Fe_2O_3)	
Track to Track	50dB
Channel Separation (with Fe_2O_3)	35dB
Harmonic Distortion (K3/with Fe_2O_3)	3%
Hum & Noise (at Vol. Min.)	−60dBs

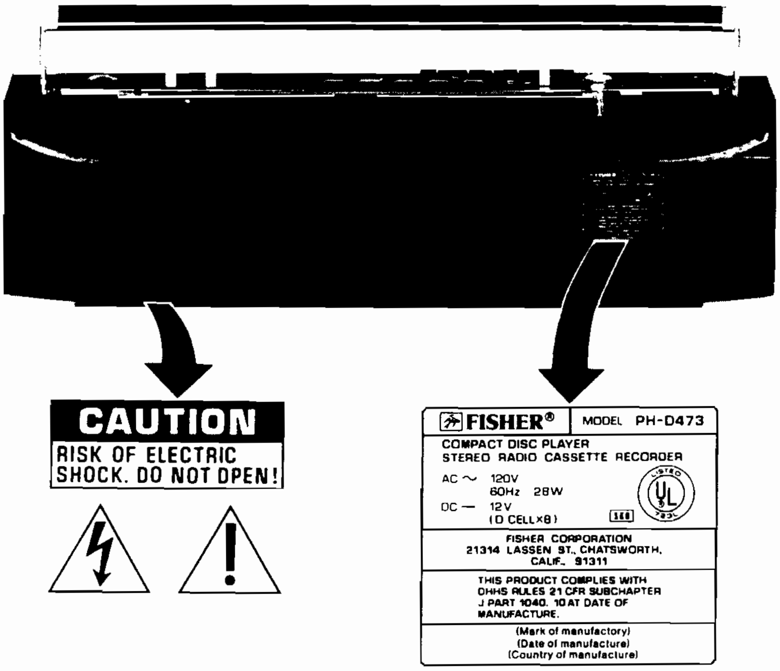
TUNER

Frequency Range	
AM	530 ~ 1,605kHz
FM	88 ~ 108MHz

—Specifications subject to change without notice.—

SAFETY CERTIFICATION

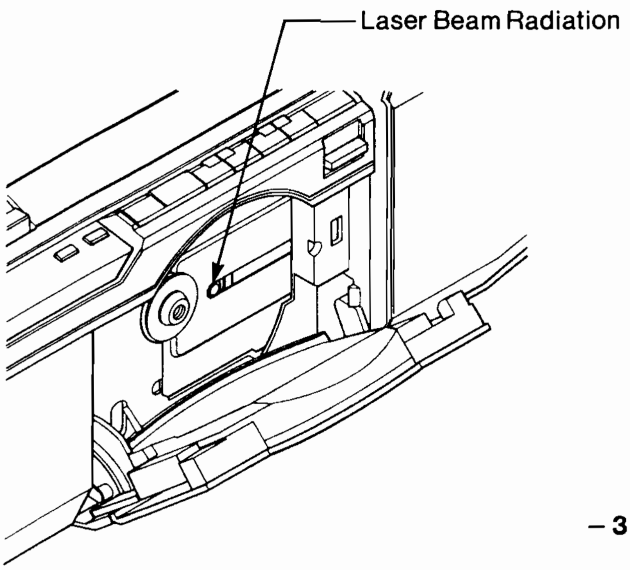
This Compact Disc Player is made and tested to meet exacting safety standards. It meets UL and FCC requirements and complies with safety performance standards of the U.S. Department of Health and Human Services.


CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN!
FISHER®
MODEL PH-D473
COMPACT DISC PLAYER
STEREO RADIO CASSETTE RECORDER
AC ~ 120V
60Hz 28W
DC — 12V
(D CELL×8)
LISTED
UL
FISHER CORPORATION
21314 LASSEN ST., CHATSWORTH, CALIF., 91311
THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J PART 1040. 10 AT DATE OF MANUFACTURE.
(Mark of manufactory)
(Date of manufacture)
(Country of manufacture)

CAUTION – USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT QUALIFIED SERVICE PERSONNEL.

LASER BEAM RADIATION SPOT


Laser Beam Radiation

Laser Diode Properties
Material : Ga-Al-As
Wavelength : 755 – 815 nm (25°C)
Laser Output : Continuous Wave max. 0.5 mW

DISASSEMBLY INSTRUCTIONS

GENERAL REMARKS

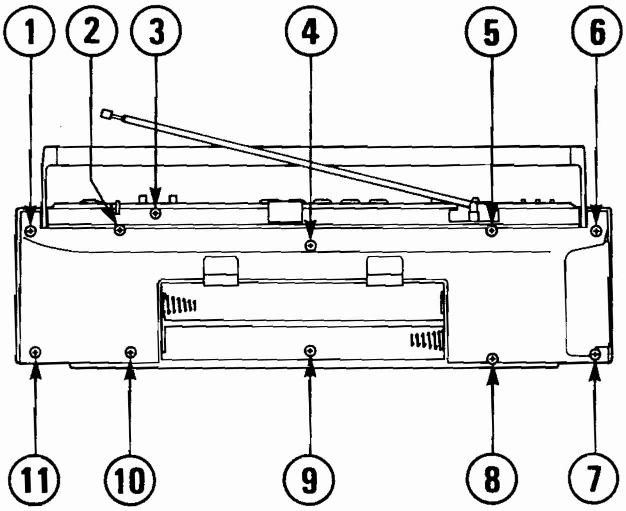
‡ Before disassembling the unit, spread a soft cloth or rubber mat on the work bench to avoid scratches and grease spots.

‡ As static electricity is likely to damage transistors and ICs, spread a cloth of the like which does not cause static electricity.

‡ Reassemble the unit correctly noting the kinds of fastening screws and leads. Please refer to the circuit diagrams and exploded views.

CABINET BOTTOM REMOVAL

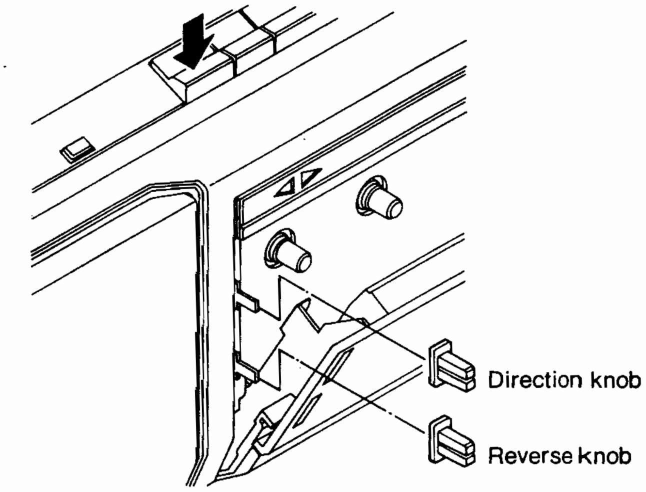
1. Press the STOP/EJECT button and remove the cassette tape from the set.
2. Press the EJECT button and remove the compact disc from the set.
3. Remove the battery cover and take out the eight batteries, then remove the 11 screws (1 ~ 11) securing the cabinet bottom.



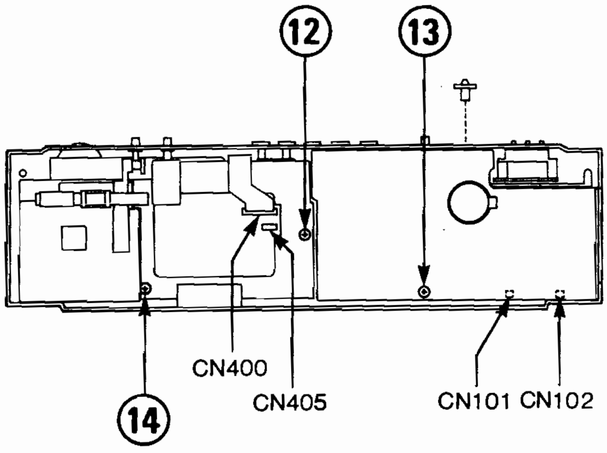
. Lift the cabinet bottom, remove the antenna connector and the connector from the batteries (CN101), then remove the cabinet bottom.

NNER CHASSIS REMOVAL

. Press the STOP/EJECT button and with the cassette lid open, remove the direction knob and reverse knob.

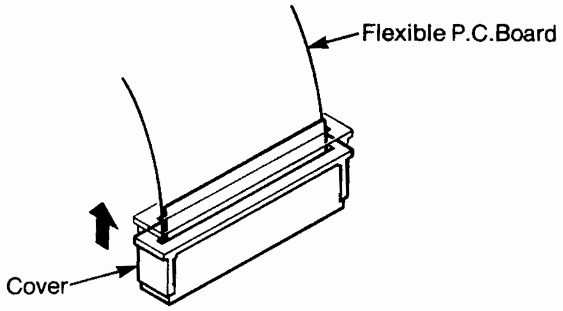


2. Remove the handle and the VOLUME knob.
3. Remove the three screws (12 ~ 14) securing the inner chassis and the three connectors (CN102, CN400, and CN405), then remove the Radio Tuner P.C.Board ground connector.



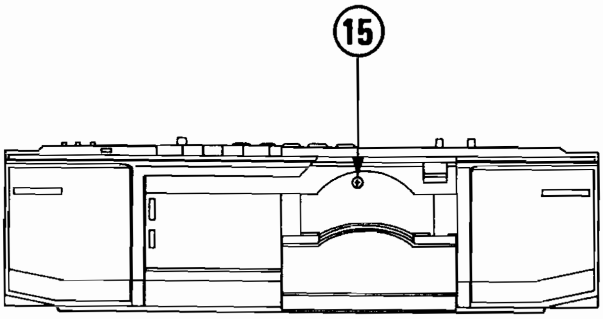
REMOVAL OF CN400

Slide the CN400 connector's cover in the direction of the arrow in the diagram and extract the flexible P.C.Board. To reattach, first insert the flexible P.C.Board then slide the cover in the direction opposite to when removing.



DISASSEMBLY INSTRUCTIONS(Continued)

4. Press the EJECT button to open the disc lid, then remove the screw (15) securing the inner chassis.

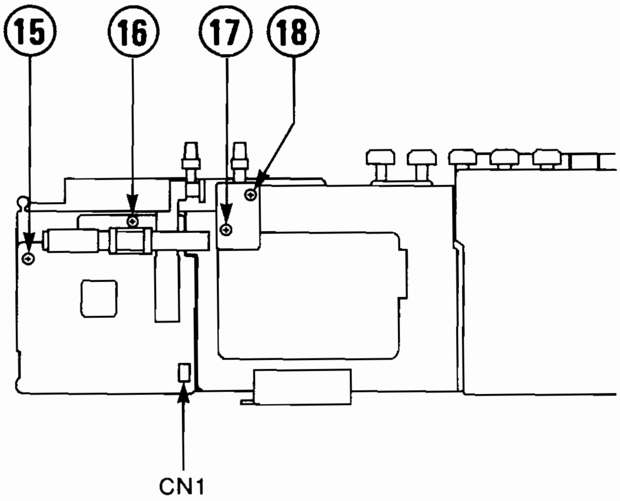


5. Remove the solder of the two mic lead wires from the Amplifier P.C.Board.

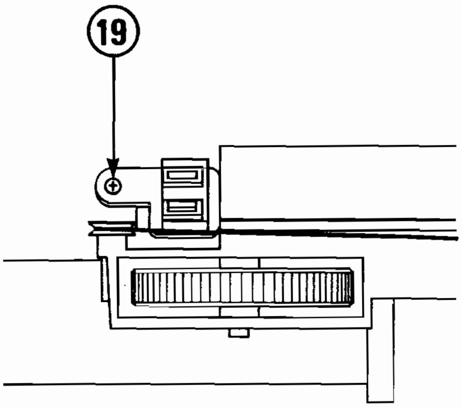
NOTE:
When assembling the inner chassis, interlock the mechanism's DIRECTION lever and the cabinet top's DIRECTION indicator.

RADIO TUNER P.C.BOARD REMOVAL

1. After removing the inner chassis, remove the two screws (15 and 16) securing the Radio Tuner P.C.Board and the two screws (17 and 18) securing the Switch P.C.Board.



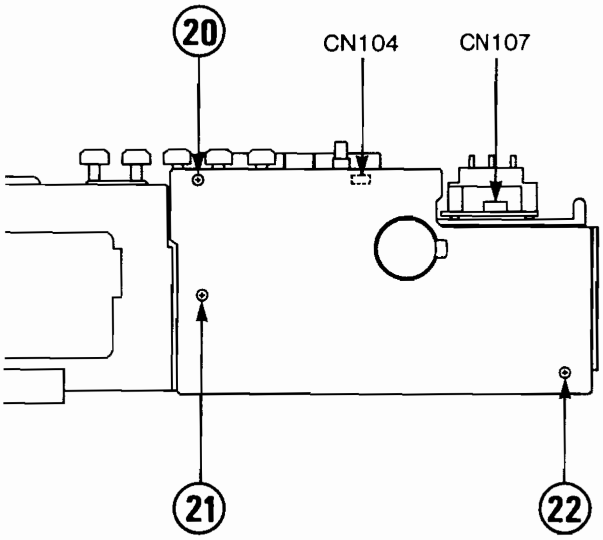
2. Remove the screw (19) securing the LED P.C.Board.



3. Remove the connector (CN1), then remove the Radio Tuner P.C.Board.

AMPLIFIER P.C.BOARD REMOVAL

1. After removing the inner chassis, remove the three screws (20 ~ 22) securing Amplifier P.C.Board.



2. Remove the two connectors (CN104 and CN107), then lift the Amplifier P.C.Board's switch side to uncover the Amplifier P.C.Board parts surface.

3. To completely detach the Amplifier P.C.Board, remove the remaining connectors and the soldering of the lead wires.

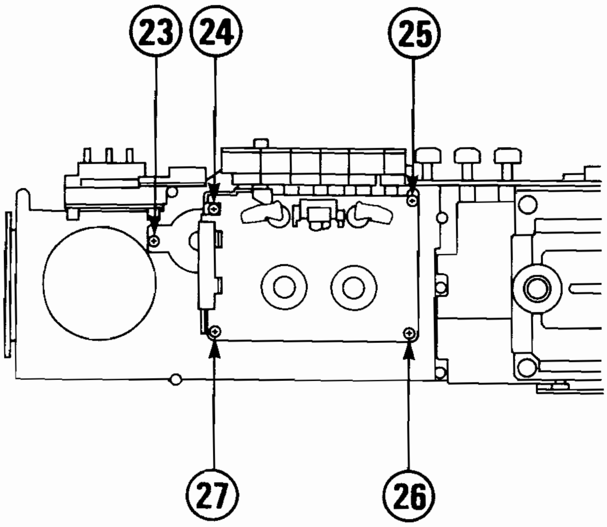
NOTE:
When assembling the Amplifier P.C.Board, insert the mechanism's RECORD lever spring into the hole in the R/P switch.

DISASSEMBLY INSTRUCTIONS (Continued)

CASSETTE MECHANISM REMOVAL

1. After removing the inner chassis, remove the five screws (23 ~ 27) securing the cassette mechanism.

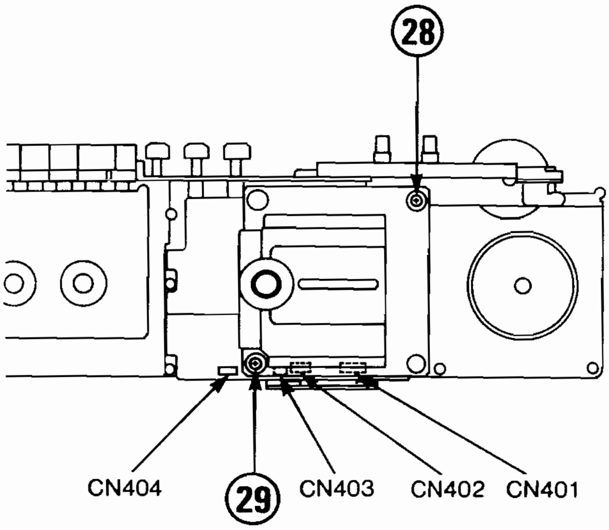
2. Remove the screw (21) securing the mechanism from the Amplifier P.C.Board side. (Refer to the section on Amplifier P.C.Board removal.)



3. Pull the mechanism forward and remove it. To completely detach the mechanism, remove the remaining connectors and the soldering of the lead wires.

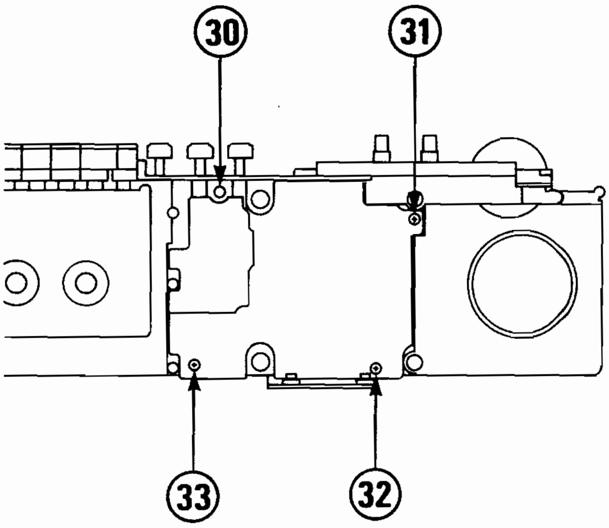
CD MECHANISM REMOVAL

After removing the inner chassis, remove the two screws (28 and 29) securing the CD mechanism and the four connectors (CN401, CN402, CN403 and CN404), then remove the CD mechanism.



CD AMPLIFIER P.C.BOARD REMOVAL

1. After removing the inner chassis, remove the four screws (30 ~ 33) securing the CD Amplifier P.C.Board, then remove the CD Amplifier P.C.Board. To completely detach the CD Amplifier P.C.Board, remove the remaining connectors and the soldering of the lead wires.

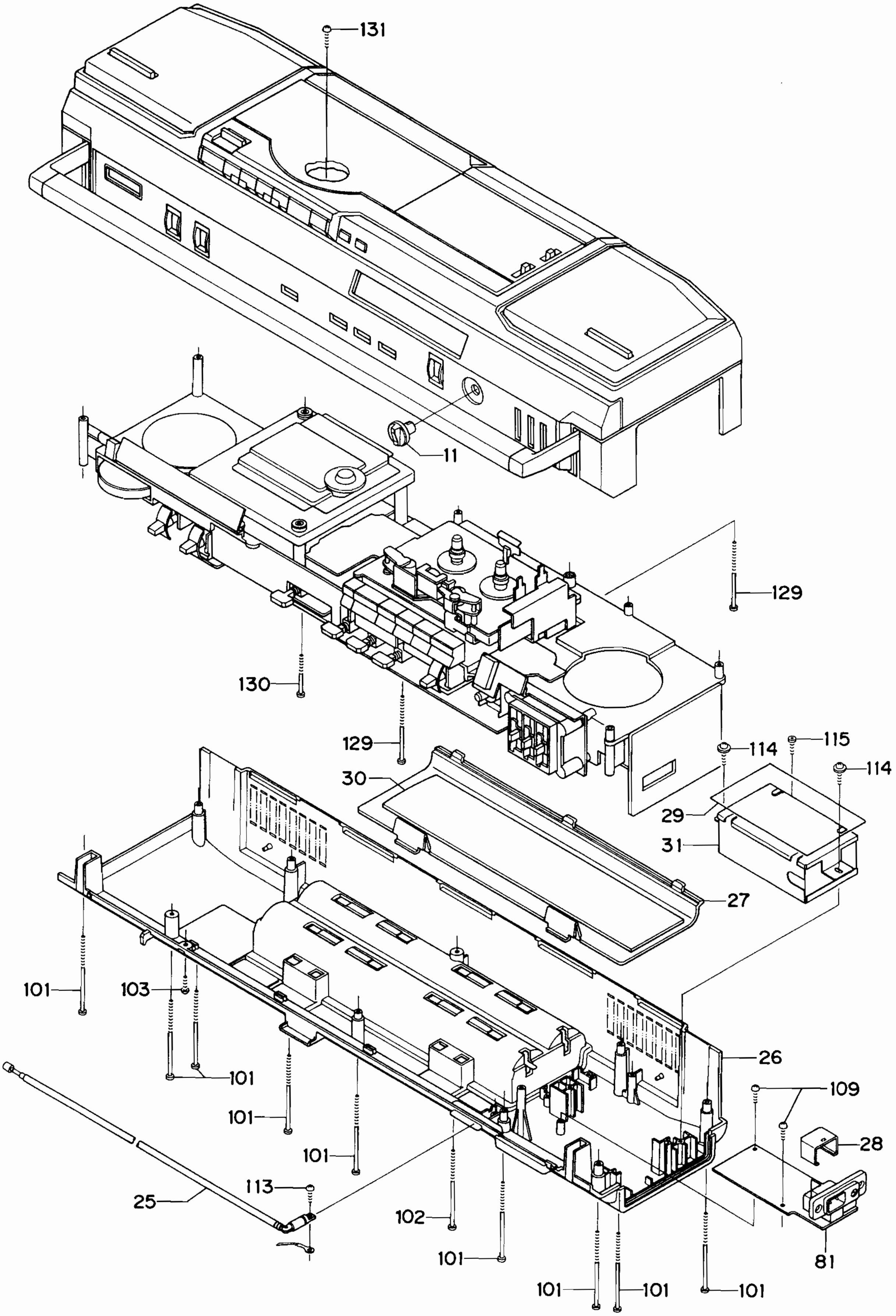


CONTROL P.C.BOARD REMOVAL

1. After removing the inner chassis, remove the dial window, control plate, and dial window plate on the cabinet top.

2. Remove the screw from the frame securing the Control P.C.Board, then remove the Control P.C.Board.

CABINET & CHASSIS EXPLODED VIEW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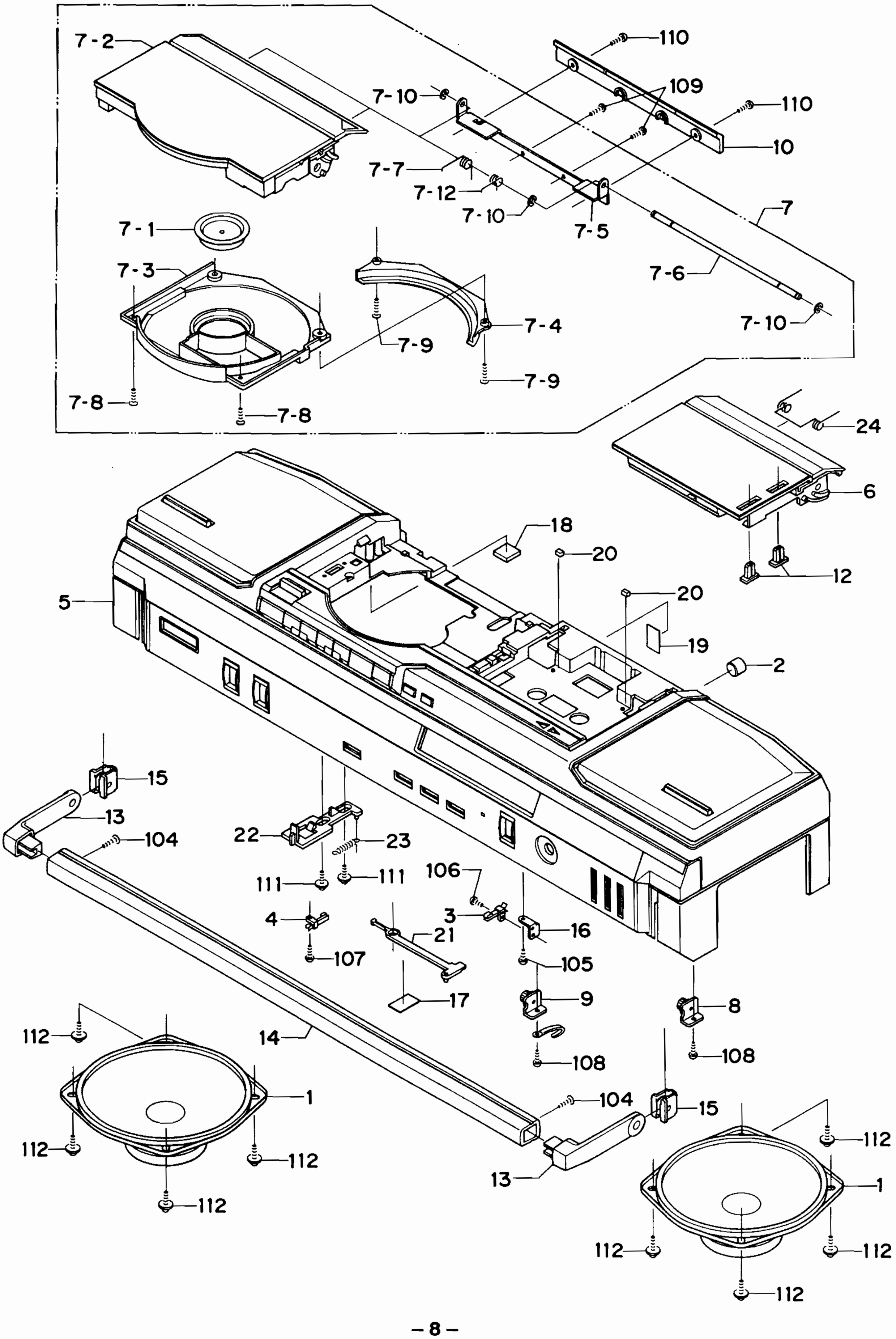
CABINET & CHASSIS EXPLODED VIEW (Continued)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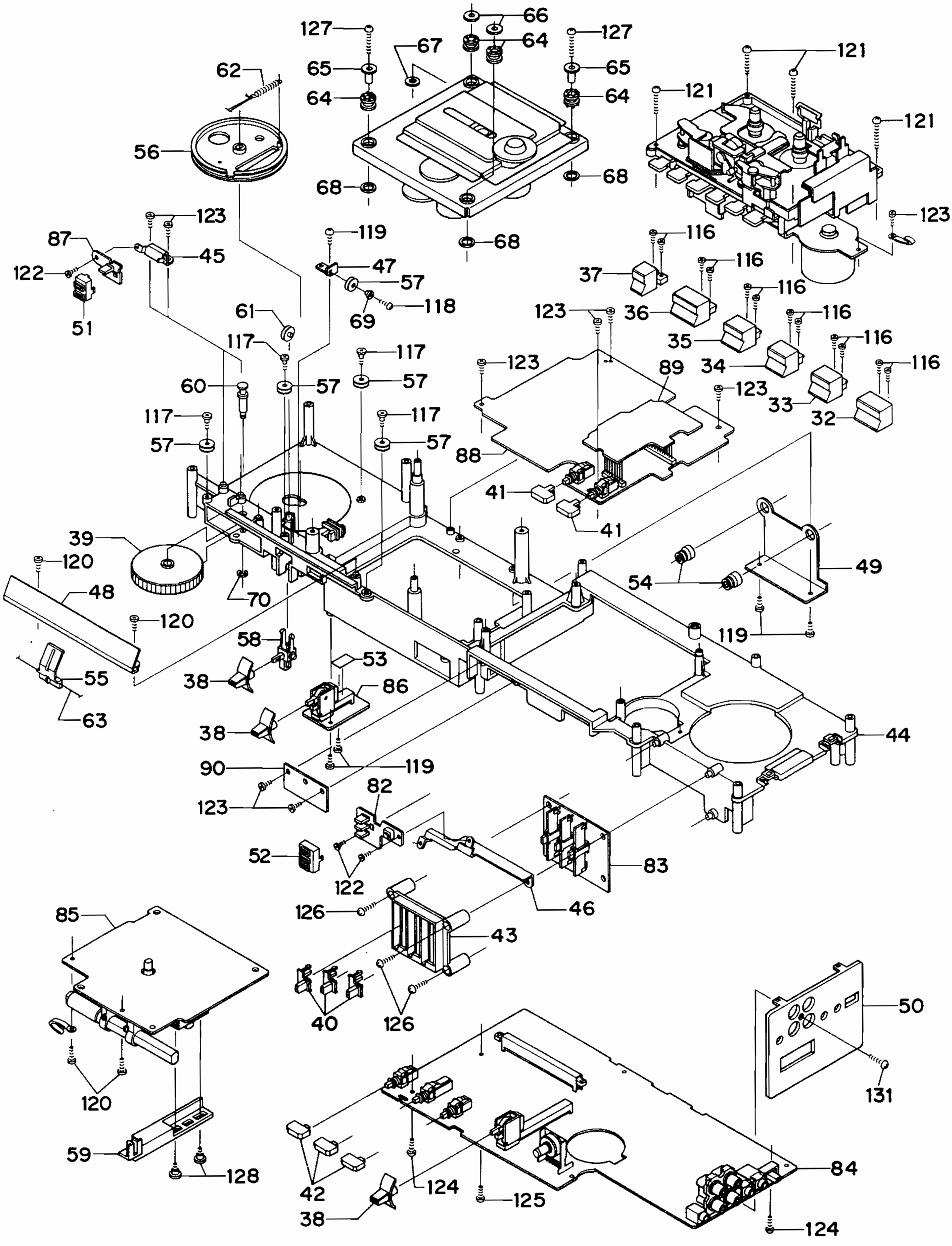
CABINET & CHASSIS EXPLODED VIEW (Continued)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CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141-6-1419-92200	Individual Carton	1
	141-6-1469-16900	Case Styrofoam Top	1
	141-6-1469-17000	Case Styrofoam Bottom	1
	141-6-2519-10020	Poly Cover 100 x 200	1
	141-6-2519-24390	Poly Cover	1
	141-6-3319-13800	Spacer	2
	141-6-4419-23831	Label Bar Cord	1
	ACCESSORIES		
	⚠ 4-2439-72750	Power Cord	1
	131-2-7103-26100	Label	1
	131-6-2719-10401	Bag Fan	1
	131-6-4159-34100	Notes	1
	131-6-4319-10802	Service Station List	1
	131-6-4519-14400	Warranty Card	1
	131-6-4939-00200	Customer Card	1
	141-6-4729-37754	Label DOLBY English	1
	141-6-4729-37755	Label Attention Lens	1
	142-6-4119-33131	Instruction Book	1
	CABINET		
	4-2359-79831	Connector 3P Assy	1
	4-2379-71140	Ring Terminal Assy	1
	4-2359-79635	Connector 1P Assy [CN500]	1
	4-2359-79932	Connector 4P Assy [CN503]	1
	141-2-1419-24900	Rating Plate	1
	141-2-4469-48800	Cushion Switch	5
	141-2-4729-04000	Lug	3
1	4-1519-72680	Speaker (3.2Ω) [SP101 & SP201]	2
2	4-1539-70661	Microphone [BM1]	1
3	4-2319-71863	Leaf Switch (Lid Open) [S101]	1
4	4-2319-75820	Leaf Switch (Eject) [S102]	1
5	141-0-1129-22102	Cabinet Top Assy	1
	Following the Control P.C.B. Assy is included in Cabinet Top.		
	141-0-1939-17680	Control P.C.B. Assy	1
6	141-0-1249-42002	Lid Cassette Assy	1
7	141-0-1249-42102	Lid Disk Complete	1
7-1	141-0-8619-00200	Magnet Assy	1
7-2	141-0-1249-44801	Lid Disk Assy	1
7-3	141-2-2719-20500	Holder Disk	1
7-4	141-2-2719-21300	Holder Disk Upper	1
7-5	141-2-3519-81000	Bracket Lid Cassette	1
7-6	141-2-4469-57200	Brake Pad	1
7-7	141-2-6129-07300	Shaft Lid Disk	1
7-8	141-2-8529-34800	Spring Lid Disk	1
7-9	143-3-1202-61013	Screw, Flat Hd. Tapping-B, +M2.6x10	2
7-10	143-3-1202-61413	Screw, Flat Hd. Tapping-B, +M2.6x14	2
7-11	112-3-1303-00011	E Ring, M3.0	3
7-12	141-2-8529-38600	Spring Lid Disk B	1
8	141-0-5519-08504	Gear Eject Assy	1
9	141-0-5519-08506	Gear Eject Assy	1
10	141-2-1219-38702	Cover Bracket Lid	1
11	141-2-1639-57401	Knob Volume	1
12	141-2-1649-45000	Knob Channel	2
13	141-2-1719-29700	Arm Handle	2
14	141-2-1719-30902	Handle	1
15	141-2-2719-18500	Holder Handle	2
16	141-2-3519-81300	Bracket Switch	1
17	141-2-4469-21300	Cushion	1
18	141-2-4469-57800	Cushion	1
19	141-2-4469-57900	Cushion	1
20	141-2-4469-58000	Cushion	2
21	141-2-7429-02200	Lock Lid Cassette	1
22	141-2-7429-02300	Lock Lid Disk	1
23	141-2-8519-58100	Spring Brake	1
24	141-2-8529-34700	Spring Lid Cassette	1
25	4-2449-70062	Antenna	1
26	141-0-1129-22202	Cabinet Bottom Assy	1
27	141-2-1339-38602	Lid Battery	1
28	141-2-4359-21300	Socket Cover	1
29	141-2-4359-44200	Insulater	1
30	141-2-4459-41400	Cushion Battery	1
31	⚠ 4-2519-74251	Power Trans	1
32	141-2-1659-68900	Button Stop	1
33	141-2-1659-69000	Button Pause	1
34	141-2-1659-69100	Buton F.FWD	1
35	141-2-1659-69200	Button Rewind	1
36	141-2-1659-69300	Button Play	1
37	141-2-1659-69400	Button Record	1
38	141-2-1629-12000	Knob Function	3
39	141-2-1639-64000	Knob Tuning	1
40	141-2-1649-45100	Knob Slide Volume	3
41	141-2-1659-70301	Knob Push A	2
42	141-2-1659-70400	Knob Push B	3
43	141-2-2629-09600	Cover Volume	1
44	141-2-3119-28700	Chassis Radio	1
45	141-2-3519-80600	Bracket PCB LED	1
46	141-2-3519-80700	Bracket PCB ASF	1
47	141-2-3519-81900	Bracket Roller Dial	1
48	141-2-3519-82000	Bracket Pointer	1
49	141-2-3519-82800	Bracket Cushion	1
50	141-2-3679-33302	Plate Jack	1
51	141-2-3689-14700	Holder LED Tunner	1
52	141-2-3689-14900	Holder LED ASF	1
53	141-2-4359-44300	Insulater	1
54	141-2-4459-41300	Cushion CD Under	2
55	141-2-5119-14200	Pointer	1
56	141-2-5389-03400	Drum	1
57	141-2-5519-03300	Roller Dial A	5
58	141-2-6219-05100	Lever Band Select	1
59	141-2-7319-78100	Plate Band Select	1
60	141-2-7519-78200	Shaft Dial	1
61	141-2-8259-05900	Roller Dial	1

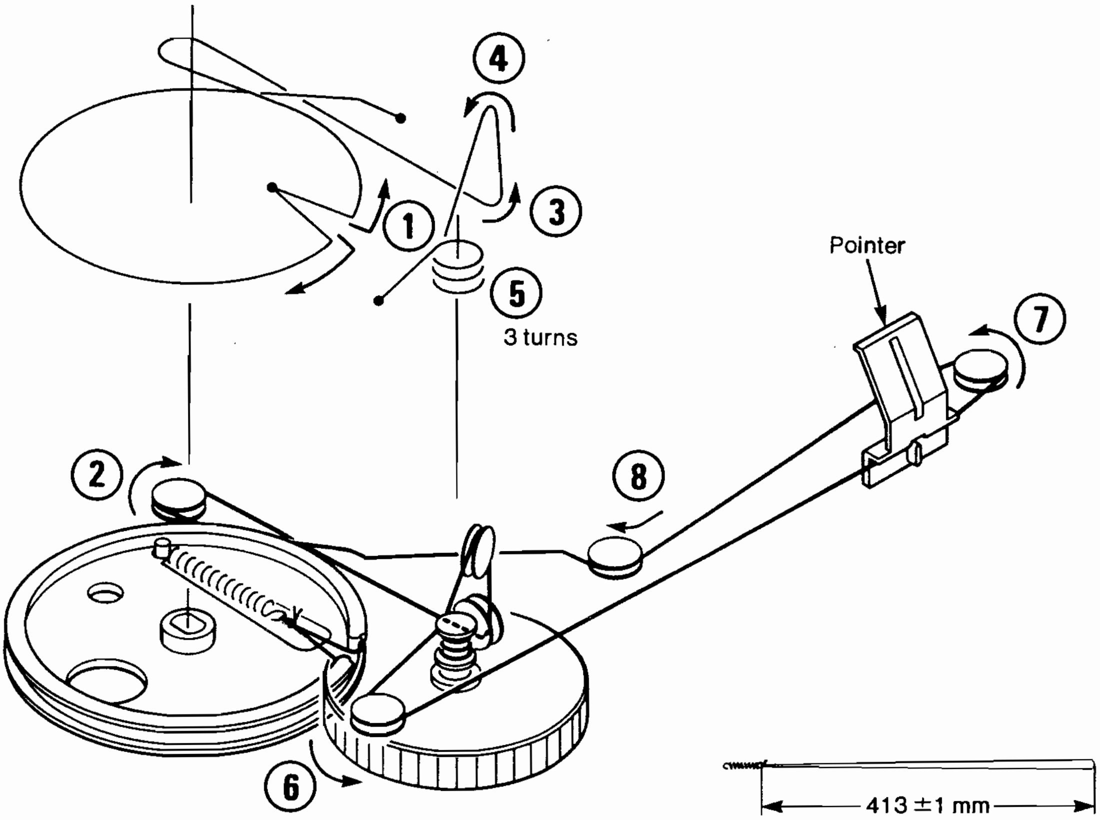
CABINET & CHASSIS PARTS LIST (Continued)

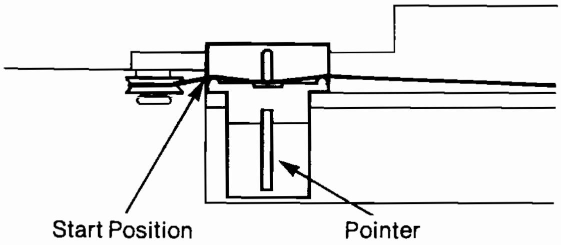
Ref. No.	Part No.	Description	Q'ty
62	141-2-8519-78000	Spring Stop	1
63	628-3-0911-00000	String, φ0.5	1
64	141-2-4459-40600	Cushion Chassis	2
65	141-2-7539-81600	Spacer Chassis	2
66	141-2-7539-84100	Spacer PCB Disk	2
67	141-2-7539-86600	Spacer	1
68	141-2-7539-86700	Spacer Cushion	3
69	141-2-7539-80700	Spacer	1
70	112-3-1303-00011	E Ring, M3.0	1
81	141-0-1939-17591	Power Supply P.C.B. Assy	1
82	141-0-1939-17600	ASF LED P.C.B. Assy	1
83	141-0-1939-17650	EQ P.C.B. Assy	1
84	141-0-1939-17661	Amplifier P.C.B. Assy	1
85	141-0-1939-17621	Radio Tuner P.C.B. Assy	1
86	141-0-1939-17631	Switch P.C.B. Assy	1
87	141-0-1939-17641	LED P.C.B. Assy	1
88	141-0-1939-17831	CD Main P.C.B. Assy	1
89	141-0-1939-17840	CD Sub 1 P.C.B. Assy	1
90	141-0-1939-17850	CD Sub 2 P.C.B. Assy	1
101	141-2-4219-09801	Screw	9
102	141-2-4219-12403	Screw, Pan Hd. Tapping, M3.0x55	1
103	143-3-1303-00813	Screw, Pan Hd. Tapping-B, +M3.0x8	1
104	103-3-1603-01213	Screw, Oval Hd. Tapping-2, +M3.0x12	2
105	143-3-1302-60618	Screw, Pan Hd. Tapping-B, +M2.6x6	1
106	101-3-1302-60511	Screw, Pan Hd., +M2.6x5	1
107	143-3-1302-60611	Screw, Pan Hd. Tapping-B, +M2.6x6	1
108	143-3-1302-61011	Screw, Pan Hd. Tapping-B, +M2.6x10	2
109	143-3-1303-00811	Screw, Pan Hd. Tapping-B, +M3.0x8	4
110	143-3-1303-01013	Screw, Pan Hd. Tapping-B, +M3.0x10	2
111	141-2-4219-05400	Screw, w/Washer	2
112	141-2-4219-15601	Screw	8
113	143-3-1303-01011	Screw, Pan Hd. Tapping-B, +M3.0x10	1
114	141-2-4219-19100	Screw Washer	2
115	143-3-1703-01211	Screw, Bind Hd. Tapping-B, +M3.0x12	1
116	141-2-4219-21800	Screw	12
117	141-2-4219-14000	Screw	4
118	101-3-1302-00511	Screw, Pan Hd., +M2.0x5	1
119	143-3-1302-60611	Screw, Pan Hd. Tapping-B, +M2.6x6	5
120	143-3-1302-60811	Screw, Pan Hd. Tapping-B, +M2.6x8	4
121	143-3-1303-01611	Screw, Pan Hd. Tapping-B, +M3.0x16	4
122	141-2-4219-10500	Screw	3
123	143-3-1702-60811	Screw, Bind Hd. Tapping-B, +M2.6x8	7
124	101-3-1302-60611	Screw, Pan Hd., +M2.6x6	2
125	143-3-1302-60811	Screw, Pan Hd. Tapping-B, +M2.6x8	1
126	143-3-1302-61011	Screw, Pan Hd. Tapping-B, +M2.6x10	3
127	143-3-1303-01811	Screw, Pan Hd. Tapping-B, +M3.0x18	2
128	141-2-4219-29700	Screw	2
129	141-2-4219-12402	Screw	2
130	141-2-4219-31700	Screw	1
131	143-3-1302-61213	Screw, Pan Hd. Tapping-B, +M2.6x12	2

NOTES:

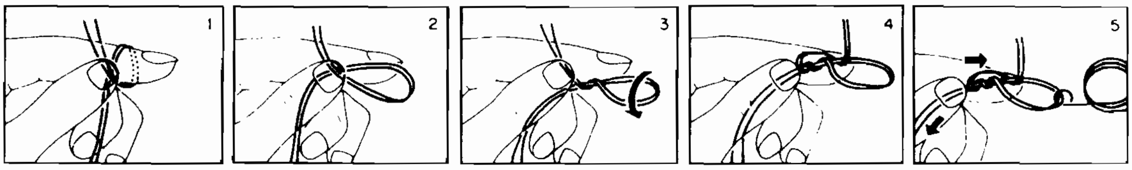
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

DIAL CORD STRINGING


④
③
①
⑤
3 turns
Pointer
⑦
②
⑧
⑥
413 ±1 mm


Start Position
Pointer

CORD KNOTTING



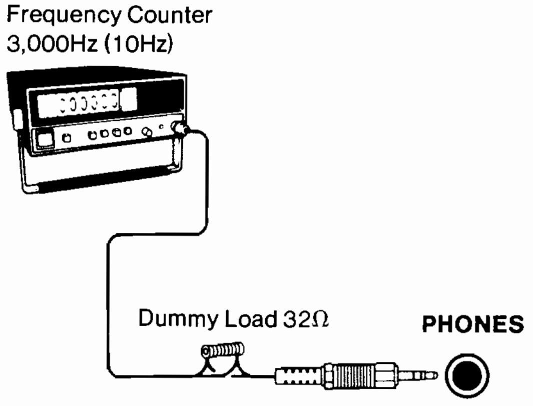
ELECTRICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- VTVM (2 sets)
- Frequency Counter
- Dummy Load (32Ω)
- Dualtrace Oscilloscope
- DC Constant-voltage Regulator
- Low Frequency Oscillator
- Test Tapes
  - ‡ 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - ‡ 10kHz Test Tape (Example: TEAC MTT-114) for Head Azimuth Adjustment
  - ‡ 400Hz Test Tape (Example: TEAC MTT-150) for Playback Sensitivity Adjustment
- Alignment Tool

NORMAL TAPE SPEED ADJUSTMENT

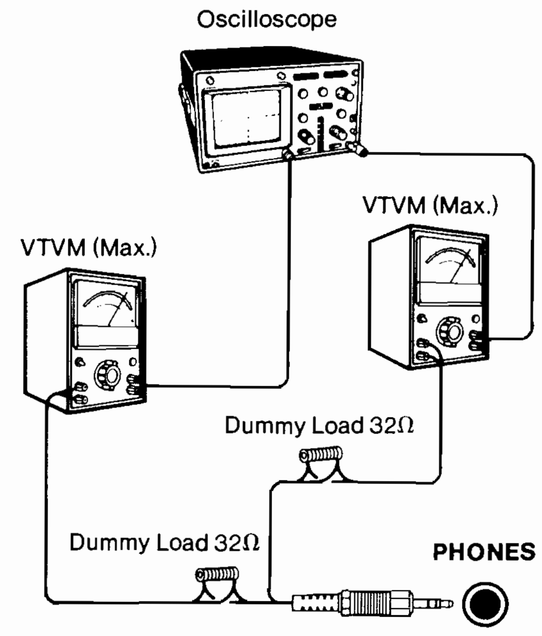
1. Connect a frequency counter to the left or right channel output of the headphone jack as illustrated. Then, insert a 3kHz test tape (Example: TEAC MTT-111) into the cassette compartment.



2. Detach the Cabinet Bottom and adjust the tape speed by slowly turning the potentiometer inside the Motor until the frequency counter reads 3,000Hz (±10Hz).

HEAD AZIMUTH ADJUSTMENT

Detach the cassette compartment lid from the unit and connect a dualtrace oscilloscope and a VTVM to both channel outputs of the headphone jack as illustrated.

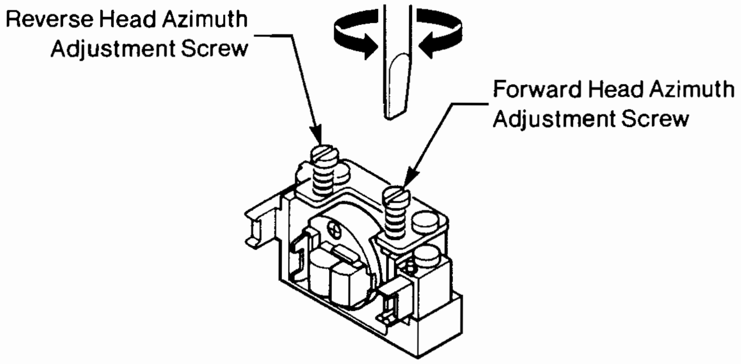


Then, set the dualtrace oscilloscope as follows:

- ‡ MODE .... CHOP (chopped)
- ‡ SOURCE .... INT (internal), CH1 or CH2
- ‡ SWEEP MODE .... AUTO (automatic)

NOTE:
Adjust the field on the oscilloscope with the VOLT. ADJ. and TIME ADJ.

1. Insert a 10kHz test tape (Example: TEAC MTT-114) and set it in the forward playback mode.
2. Adjust the forward head azimuth adjustment screw so that the wave forms become maximum on the oscilloscope and the right wave form overlaps with the left one.
3. Next turn the same tape over and set to the reverse playback mode.
4. Adjust the reverse head azimuth adjustment screw in the same way as for the forward side.



5. Repeat the above several time.

ELECTRICAL ADJUSTMENTS (Continued)

PLAYBACK SENSITIVITY ADJUSTMENT

1. Connect a VTVM between the chassis and test points TP DL (left channel) and TP DR (right channel).
2. Playback the test tape (MTT-150 Dolby level).
3. Adjust P101 and P201 so that the output at test points TP DL and TP DR is 580mV.

RECORD AND PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

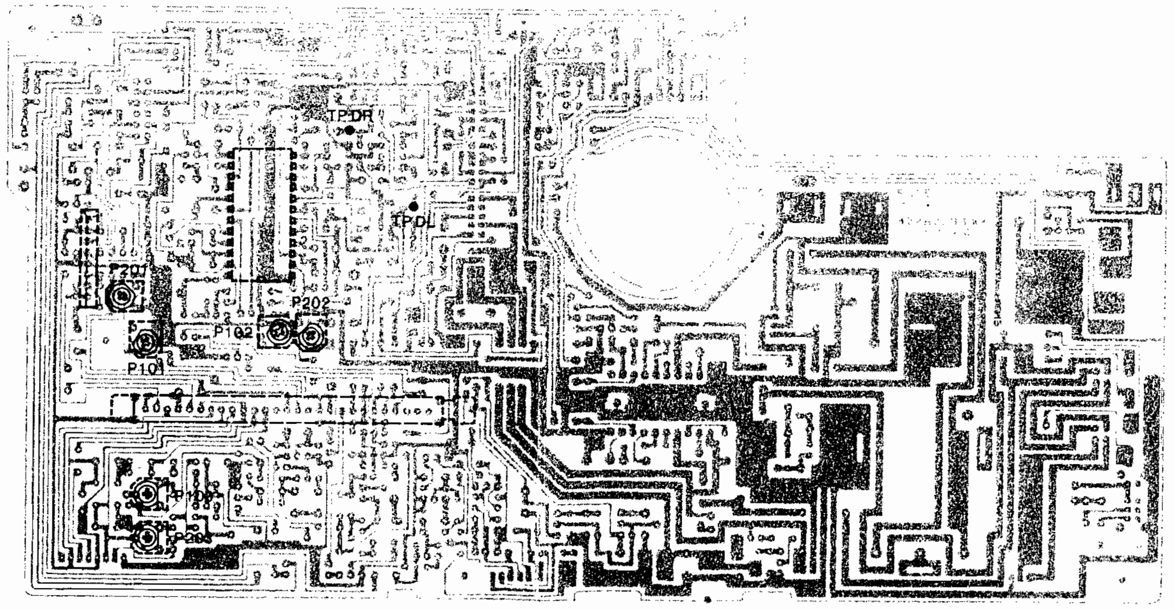
1. Connect a low frequency generator to the LINE IN terminal's left and right channels.
2. Connect a VTVM between the chassis and test points TP DL (left channel) and TP DR (right channel).
3. Insert a normal tape (AC223) and set the unit to the record mode.
4. Input signals of 1kHz and 11kHz at –30dBs (31.5mV) from the low frequency oscillator and record these signals on the tape.
5. Playback the recorded signals and adjust P103 and P203 so that the output deviation between the 1kHz and 11kHz signals is within ±1.0dB.

RECORDING AND PLAYBACK OUTPUT ADJUSTMENT

1. Connect a low frequency oscillator to the LINE IN terminal's left and right channels.
2. Connect a VTVM between the chassis and test points TP DL (left channel) and TP DR (right channel).
3. Insert a normal tape (AC223) and set the unit to the record mode.
4. Input signals of 1kHz at –30dBs (31.5mV) from the low frequency oscillator and record these signals on the tape.
5. Playback the recorded signals and adjust P102 and P202 so that the difference between the monitor output during recording and the output upon playback is 0dB±0.5dB.

AMPLIFIER P.C.BOARD LAYOUT ALIGNMENT POINTS

(BOTTOM VIEW)



TUNER ADJUSTMENT

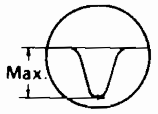
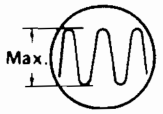
EQUIPMENT REQUIRED

- AM Standard Signal Generator
- FM Standard Signal Generator
- Generator Scope
- Loop Antenna
- Ceramic Capacitor (10pF)
- Dummy Antenna (75Ω, unbalanced type) for FM
- Carbon Resistor (100kΩ)
- VTVM
- Oscilloscope
- Frequency Counter
- Alignment Tool
- Before performing the adjustment, set the switches and controls as follows:
  - ‡ Function Switch .... RADIO
  - ‡ Volume Controls .... Arbitrary

NOTE:
Use an alignment tool with plastic grip for all adjustments.

AM ALIGNMENT

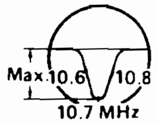
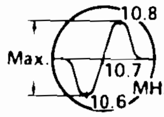
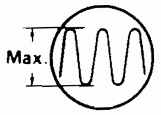
Standard Test Frequency 400Hz and Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF for AM	Connect loop antenna to output terminal of gene-scope. Place loop antenna 60cm away from bar antenna.	Connect VTVM and oscilloscope to Headphone Jack.	455kHz	Low End	T3	Obtain symmetrical curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna.		510kHz		T4	Obtain sine-wave of 400Hz and maximum amplitude. 
3				1,670kHz	High End	TC4 (PVC)	
4	Adjustment of Tracking			600kHz	600kHz	L3 (bar ant. coil)	
5				1,400kHz	1,400kHz	TC3 (PVC)	
6	Repeat the above steps until no further change is noted in any of the adjustments.						

TUNER ADJUSTMENT (Continued)

FM ALIGNMENT

Standard test frequency 400Hz and deviation 22.5kHz

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Place output of gene-scope to TP3 through capacitor(10pF).	Connect input terminal of gene-scope to TP4.	10.7MHz	Low End	Turn T2 (blue core) fully counter-clockwise T1.	Obtain symmetrical curve and maximum amplitude. 
2						T2 (blue core)	Obtain **S** curve and maximum amplitude. 
3	Calibration of Tuning Range	Connect FM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (75Ω, unbalanced type).	Connect VTVM and oscilloscope to Speaker terminals.	87.2MHz		L2	Obtain sine-curve and maximum amplitude. 
4				109.0MHz	High End	TC2 (PVC)	
5	Adjustment of Tracking			90MHz	90MHz	L1	
6				106MHz	106MHz	TC1 (PVC)	
7	Repeat the above steps until no further change is noted in any of the adjustments.						

FM MPX (Multiplex) ADJUSTMENT

19kHz (V.C.O.) ADJUSTMENT

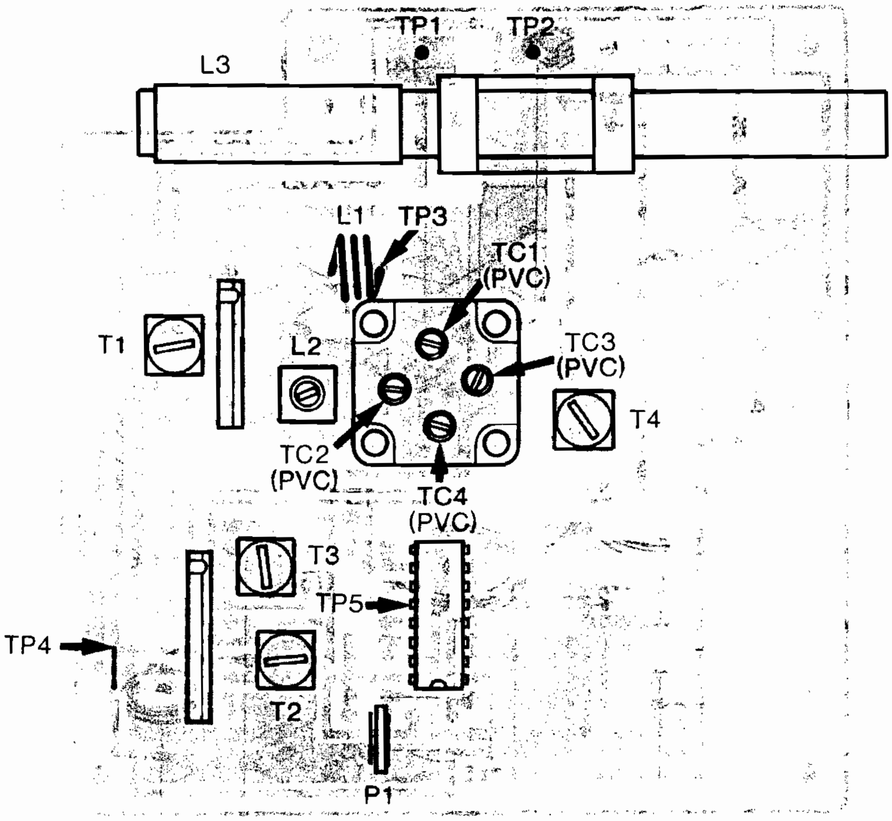
1. Before the adjustment, set the switches as follows:
   - FM Mode Switch .... STEREO
   - Band Select Switch .... FM

2. Connect a frequency counter to TP5 through a resistor 100kΩ.

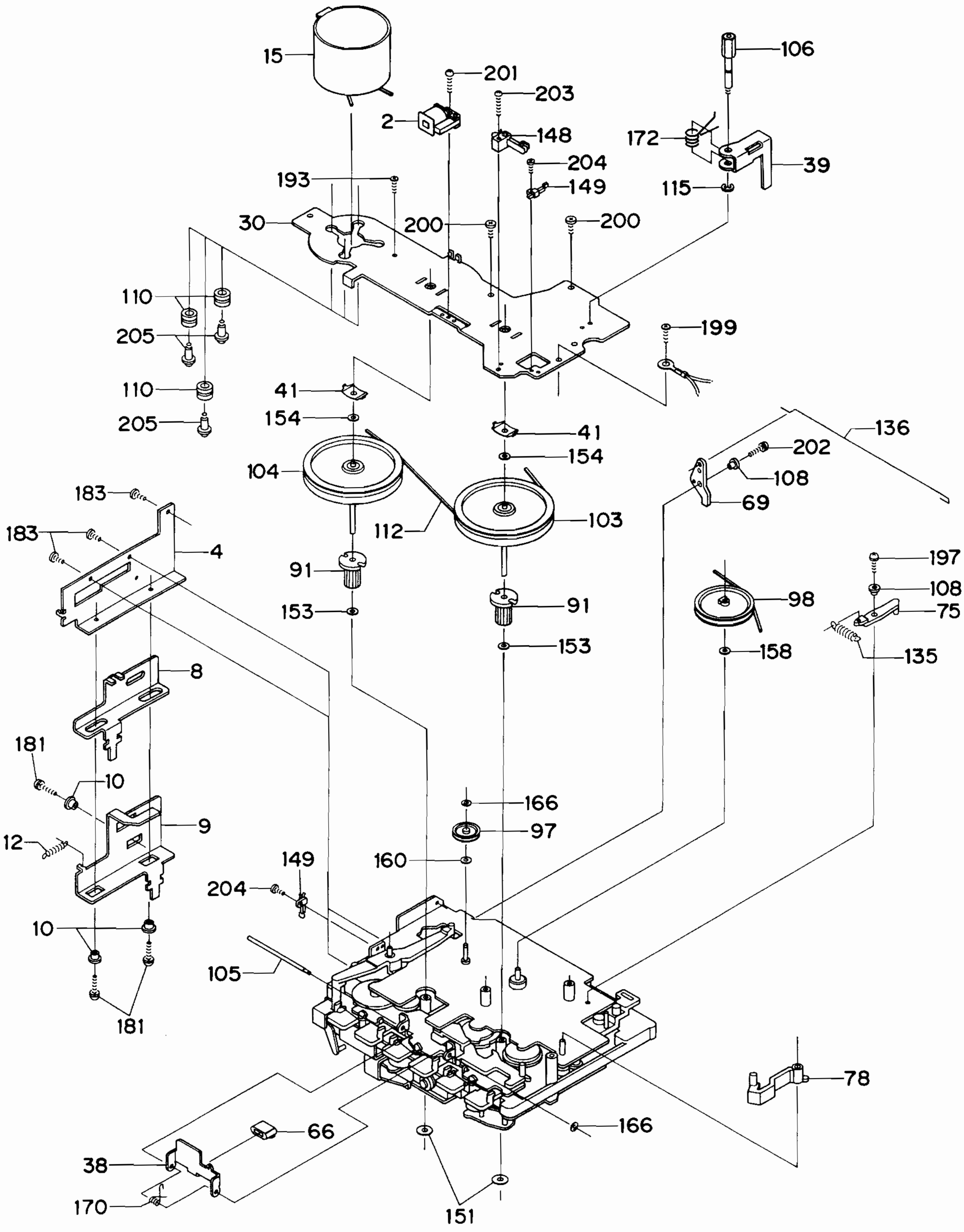
3. Adjust the potentiometer (P1) until the oscillation frequency of IC3 becomes 19kHz (±20Hz).

TUNER P.C.BOARD LAYOUT
ALIGNMENT POINTS

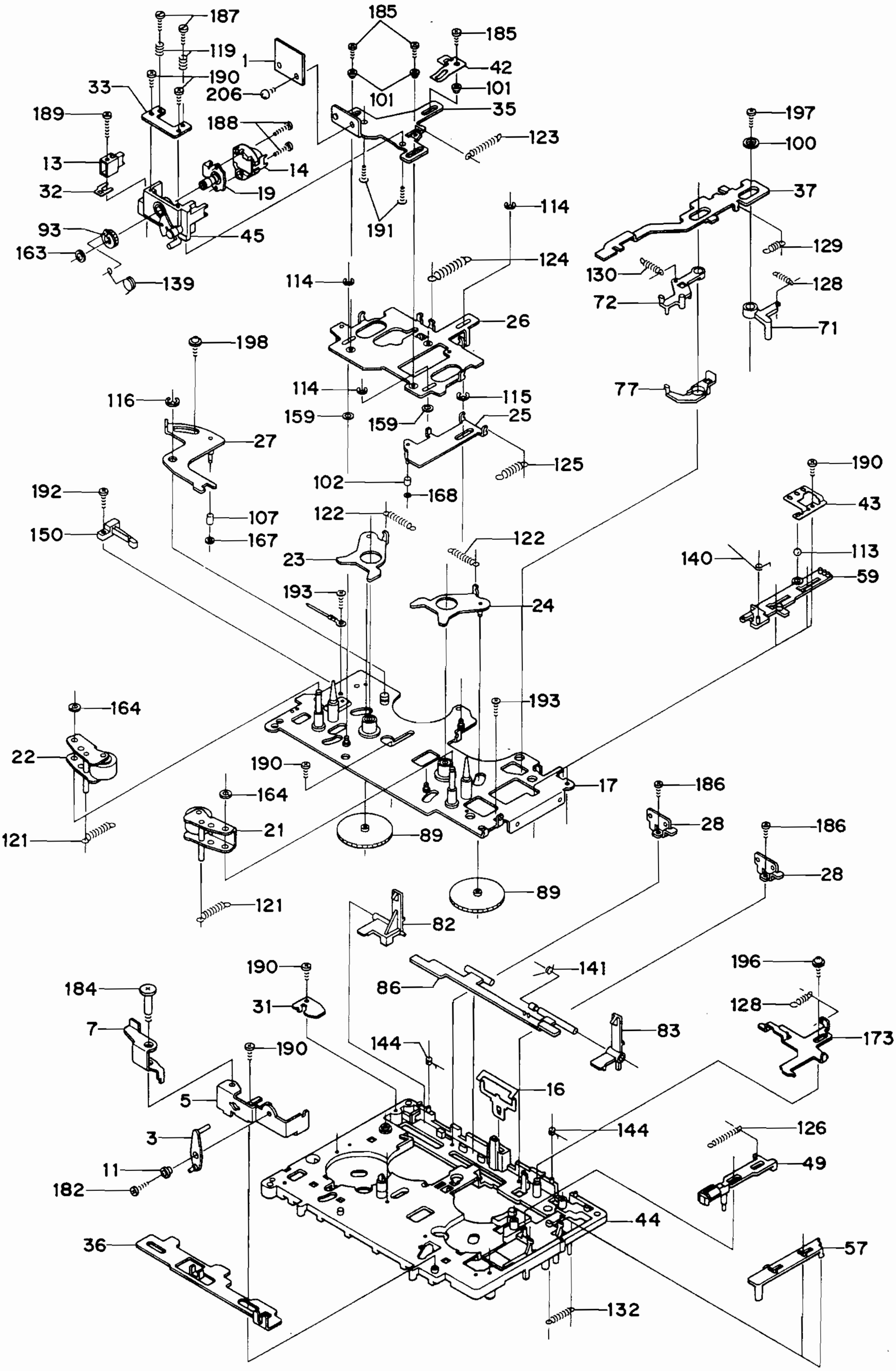
(TOP VIEW)


TP1
TP2
L3
L1
TP3
TC1
(PVC)
T1
L2
TC3
(PVC)
T4
TC2
(PVC)
TC4
(PVC)
T3
TP5
TP4
T2
P1

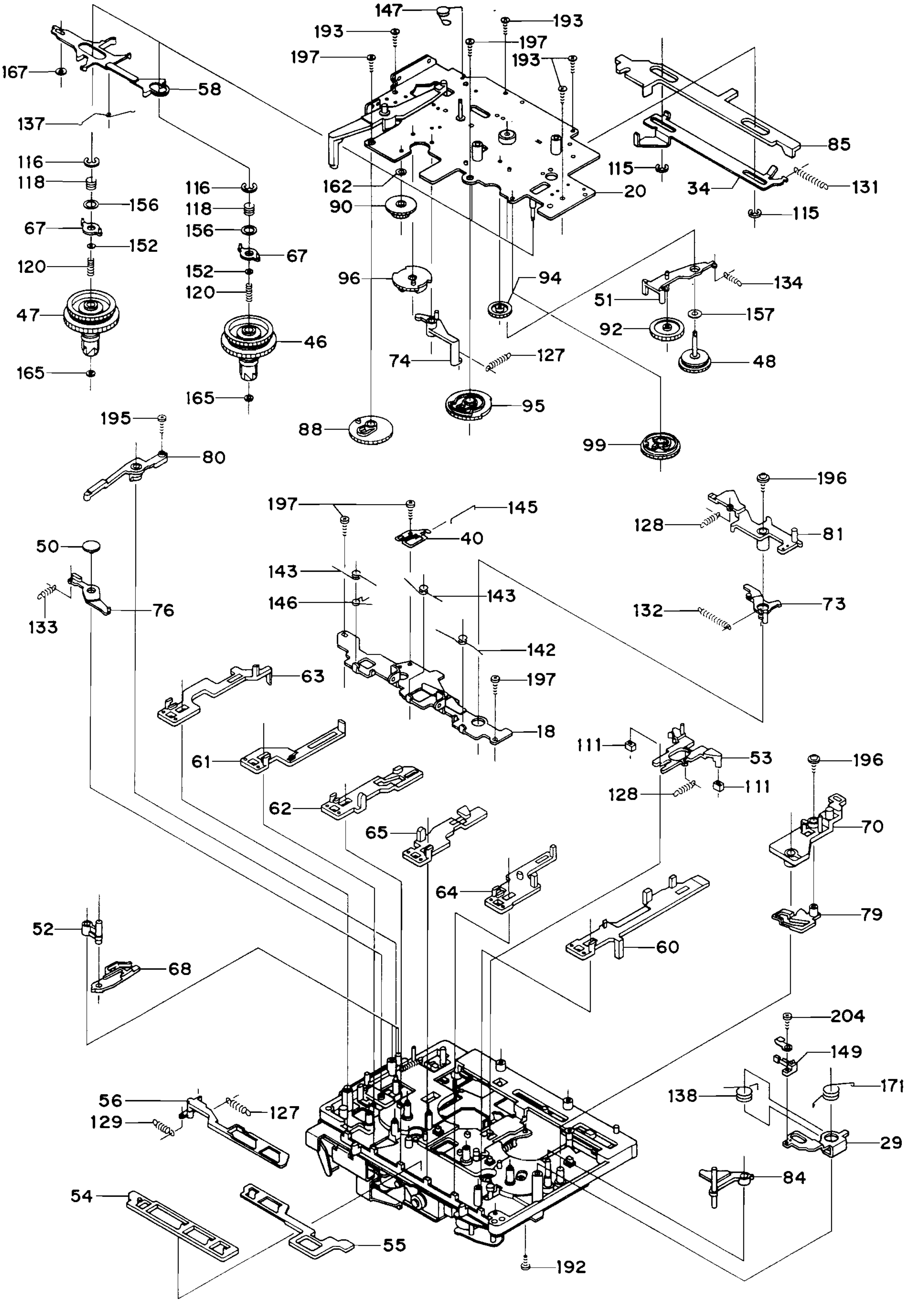
CASSETTE MECHANISM EXPLODED VIEW


15
201
203
2
148
106
172
39
204
149
115
193
30
200
200
110
205
110
205
199
41
154
41
154
136
104
202
108
69
103
112
183
183
4
91
153
91
153
197
108
98
75
158
135
8
181
10
9
12
166
97
160
149
204
10
105
181
78
166
66
38
170
151

CASSETTE MECHANISM EXPLODED VIEW (Continued)


187
185
185
119
1
42
190
33
206
101
101
35
189
188
197
123
100
13
14
32
19
37
114
93
45
191
129
163
124
130
128
139
114
72
71
26
198
116
114
115
77
159
159
25
27
125
102
190
192
168
43
107
122
150
167
122
113
23
140
59
193
24
164
193
22
190
17
186
164
28
121
21
89
186
28
121
89
82
190
141
196
184
86
31
128
7
190
144
83
173
16
5
126
144
3
49
11
182
44
36
57
132

CASSETTE MECHANISM EXPLODED VIEW (Continued)



147
193
193
197
197
193
167
58
137
116
118
156
67
152
120
47
165
116
118
156
67
152
120
46
165
162
90
20
115
85
34
131
115
96
94
51
134
157
92
48
74
127
95
88
99
195
80
196
197
145
40
128
81
50
143
146
143
76
133
132
73
142
197
63
18
111
53
61
196
128
111
62
70
65
64
79
52
60
68
204
149
171
138
56
127
129
29
84
54
55
192

CASSETTE MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
		DECK MECHANISM	
	4-2359-79239	Connector 8P Assy	1
	4-2379-71130	Ring Terminal Assy	1
	141-2-4359-35200	Sheet	2
	141-2-4359-45300	Sheet	1
	141-2-4469-41400	Pad Brake	1
	141-2-4729-06500	Lug	1
C349	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
1	4-2262-28190	PCB Head	1
2	4-2649-70633	Plunger [SL1]	1
3	141-0-7419-43900	Lever Direction Assy	1
4	141-2-3519-81100	Bracket Lever	1
5	141-2-3519-81400	Bracket Eject	1
6	141-2-4539-27200	Washer	1
7	141-2-7429-02600	Lever Eject	1
8	141-2-7429-02700	Lever Mode	1
9	141-2-7429-02800	Lever Channel	1
10	141-2-7539-80500	Spacer	3
11	141-2-7539-80600	Spacer	1
12	141-2-8519-03400	Spring Slide PL Pause	1
13	4-2039-72220	Photo R.SPI-305Dummy	1
14	4-2429-73020	Rp.e Rotary Head [HD1]	1
15	4-5279-71224	Motor [M1]	1
16	141-2-8539-54801	Spring Cassette	1
17	141-0-3129-02401	Plate Chassis Assy	1
18	141-0-3169-09800	Plate Fix Assy	1
19	141-0-3759-01500	Plate Head Assy	1
20	141-0-5319-09402	Plate Reel Assy	1
21	141-0-5459-02700	Arm Pinch Assy	1
22	141-0-5459-02701	Arm Pinch Assy	1
23	141-0-5559-07400	Arm Take Left Assy	1
24	141-0-5559-07500	Arm Take Right Assy	1
25	141-0-7319-31800	Lever Controll	1
26	141-0-7319-31900	Plate Controll Assy	1
27	141-0-8419-05000	Arm Assist Record Assy	1
28	141-2-3169-26900	Bracket Switch	2
29	141-2-3169-31400	Arm ASF Switch	1
30	141-2-3169-31900	Support Flywheel	1
31	141-2-3169-32200	Record Stopper	1
32	141-2-3529-18100	Spacer Head	1
33	141-2-7319-68300	Plate Azimuth	1
34	141-2-7319-68400	Plate Slide Record	1
35	141-2-7319-68700	Base Slide	1
36	141-2-7319-78500	Plate Slide	1
37	141-2-7319-78800	Lever Lock Lid	1
38	141-2-7439-46100	Arm Lock ASF	1
39	141-2-8419-16700	Arm R/P Switch	1
40	141-2-8539-55900	Spring Pause	1
41	141-2-8539-57800	Spring Flywheel	2
42	141-2-8539-58000	Spring Base	1
43	141-2-8539-60400	Spring Mode	1
44	141-0-3119-26400	Chassis Frame Assy	1
45	141-0-3759-01600	Head Base Complete	1
46	141-0-5519-12200	Reel Supply Assy	1
47	141-0-5519-12300	Reel Take-up Assy	1
48	141-0-5519-12400	Fast Friction Assy	1
49	141-0-7419-43600	Lever Select Assy	1
50	141-2-3529-47800	Bush Stopper	1
51	141-2-5559-07500	Arm Fast Wind	1
52	141-2-6219-04700	Lever Change Manual	1
53	141-2-7149-07000	Plate Blake	1
54	141-2-7319-68900	Plate Lock	1
55	141-2-7319-69000	Plate Assist Fast	1
56	141-2-7319-69100	Plate Mode Fast	1
57	141-2-7319-69300	Lever Actuate Change	1
58	141-2-7319-76600	Arm Sensor	1
59	141-2-7319-82500	Lever Mode	1
60	141-2-7359-03400	Rod Record	1
61	141-2-7359-03500	Rod Pause	1
62	141-2-7359-03600	Rod Fast	1
63	141-2-7359-03700	Rod Stop	1
64	141-2-7359-03800	Rod Play	1
65	141-2-7359-03900	Rod Rewind	1
66	141-2-7419-97200	Chip ASF	1
67	141-2-7419-97300	Ring Sensor	2
68	141-2-7419-97400	Actuate Change Mode	1
69	141-2-7439-46300	Arm Cancel Mode	1
70	141-2-7439-46500	Arm Actuate Record	1
71	141-2-7439-46600	Arm Record Mode	1
72	141-2-7439-46700	Arm Mode Select	1
73	141-2-7439-46800	Arm Lock Record	1
74	141-2-7439-46900	Arm Reverse	1
75	141-2-7439-47000	Arm Set Record	1
76	141-2-7439-47200	Arm Trig Reverse	1
77	141-2-7439-47300	Arm Mode Record	1
78	141-2-7439-47400	Arm Power Switch	1
79	141-2-7439-47500	Arm Record Trig	1
80	141-2-7439-47600	Arm Shut-off	1
81	141-2-7439-47700	Arm Trig Play	1
82	141-2-7439-47800	Interlock F.FWD	1
83	141-2-7439-48000	Interlock Reviw	1
84	141-2-7439-50600	Arm Trig ASF	1
85	141-2-8429-07500	Plate Record	1
86	141-2-8459-04500	Plate Interlock	1
87	141-2-3529-47800	Bush Stopper	1
88	141-2-5519-63500	Gear Actuate Shut-off	1
89	141-2-5519-63600	Gear Take-up	2
90	141-2-5519-63900	Gear Shut-off	1
91	141-2-5519-64100	Gear Flywheel	2
92	141-2-5519-64200	Gear Idle Fast	1
93	141-2-5519-64500	Gear Head	1
94	141-2-5519-64600	Gear Idle Rewind	1
95	141-2-5519-64700	Gear Assist Play	1
96	141-2-5519-64800	Gear Assist Reverse	1
97	141-2-5519-66200	Pulley	1
98	141-2-5519-66300	Pulley Fast	1
99	141-2-5519-68500	Gear Assist Fast	1
100	141-2-3529-47400	Spacer Lock Lid	1
101	141-2-3529-47500	Spacer Base	3
102	141-2-3529-49900	Roller Control	1
103	141-2-5219-19800	Flywheel Capstan	1
104	141-2-5219-19801	Flywheel Capstan	1
105	141-2-7539-67600	Spindle ASF	1
106	141-2-7539-79700	Post Arm R/P Switch	1
107	141-2-8259-13000	Roller Assist Record	1
108	141-2-3529-47600	Spacer Arm Cancel	2
109		Not Used	
110	141-2-4459-11800	Cushion Motor	3
111	141-2-4459-29900	Damper Base Slide	2
112	141-2-5649-23400	Belt Drive	1
113	141-2-8259-04800	Ball	1
114	112-3-1301-50012	E Ring, M1.5	3
115	112-3-1302-50012	E Ring, M2.5	4
116	112-3-1303-00011	E Ring, M3.0	3
117		Not Used	
118	141-2-8559-12900	Spring	2
119	141-2-8519-84300	Spring Support Flywheel	2
120	141-2-8559-00100	Spring Supply	2

CASSETTE MECHANISM PARTS LIST (Continued)

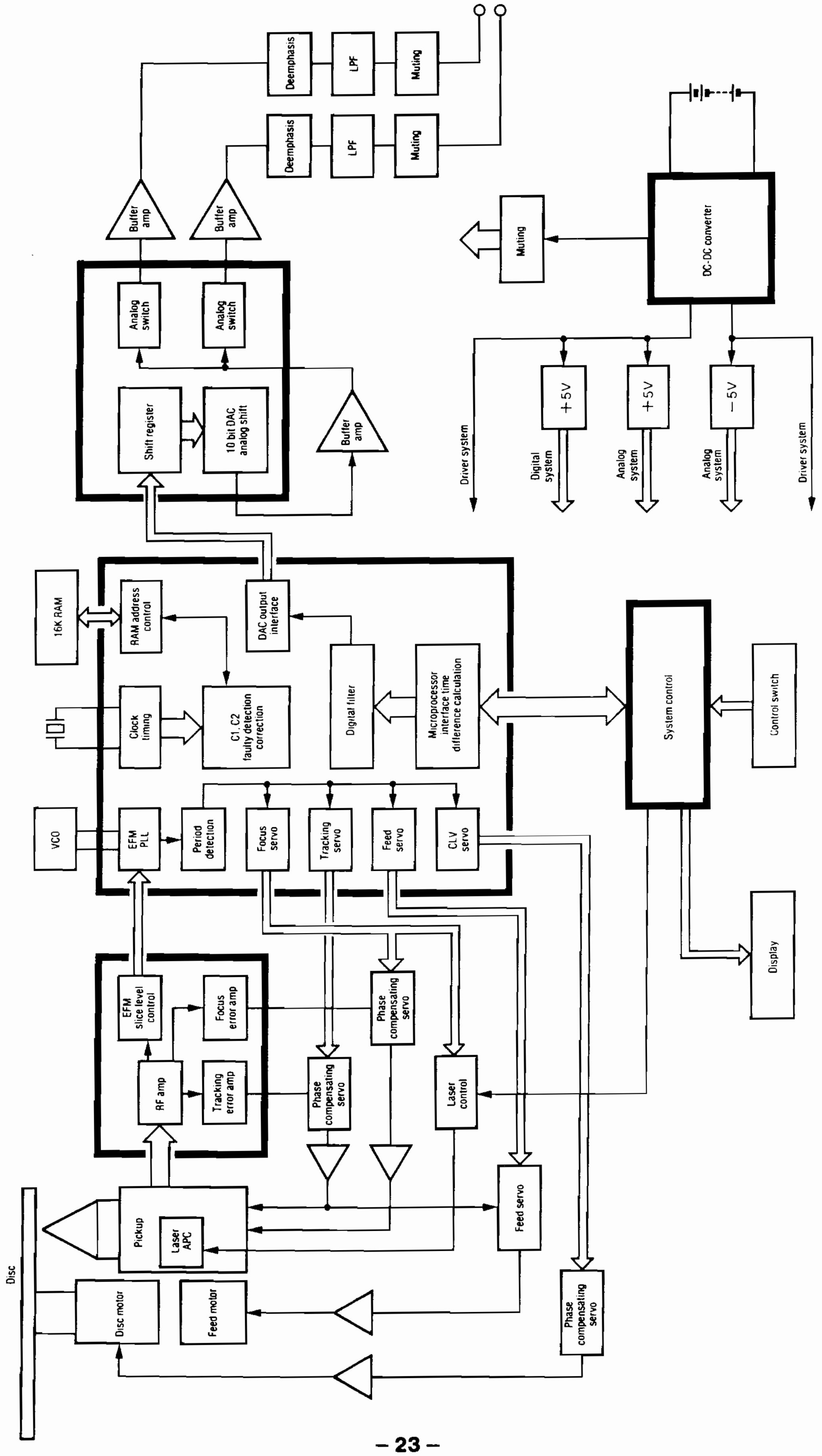
Ref. No.	Part No.	Description	Q'ty
121	141-2-8549-34300	Spring	2
122	141-2-8519-92600	Spring Lever Base	2
123	141-2-8549-07500	Spring Plate F.FWD	1
124	141-2-8549-35400	Spring	1
125	141-2-8549-37100	Spring	1
126	141-2-8549-06800	Spring Plate Lock	1
127	141-2-8549-09000	Spring Plate Slide	1
128	141-2-8519-26600	Spring Brake	4
129	141-2-8549-05700	Spring Lever Stop	3
130	141-2-8549-09000	Spring Plate Slide	1
131	141-2-8519-97600	Spring Lever ASO	1
132	141-2-8519-63600	Spring Brake	2
133	141-2-8549-00300	Spring Lever Lock	1
134	141-2-8519-92200	Spring Lever Idler	1
135	141-2-8549-30300	Spring	1
136	141-2-8549-30200	Spring Cancel Record	1
137	141-2-8529-34600	Spring Cancel ASO	1
138	141-2-8529-27100	Spring Arm ASF	1
139	141-2-8529-27000	Spring Gear Reverse	1
140	141-2-8529-26900	Spring Lever Mode	1
141	141-2-8529-26800	Spring Plate Interlock	1
142	141-2-8529-12401	Spring Rod F.FWD	1
143	141-2-8529-26700	Spring Rod	2
144	141-2-8529-26600	Spring Interlock	2
145	141-2-8529-26500	Spring Pause Lock	1
146	141-2-8529-26400	Spring Plate Lock	1
147	141-2-8529-31700	Spring Arm Change	1
148	4-2319-73450	Leaf Switch (Motor) [S501]	1
149	4-2319-76150	Leaf Switch (Reverse) [S502]	1
149	4-2319-76150	Leaf Switch (ASF) [S503]	1
149	4-2319-76150	Leaf Switch (FF/REW) [S504]	1
150	4-2319-78240	Leaf Switch (Mute) [S505]	1
151	141-2-4539-43100	Washer	2
152	141-2-4539-27601	Washer	2
153	141-2-4539-41400	Washer	2
154	141-2-4539-41401	Washer	2
155		Not Used	
156	141-2-4539-34600	Washer	2
157	141-2-4539-02200	Washer	1
158	141-2-4539-23000	Washer	1
159	141-2-4539-08000	Washer	2
160	141-2-4539-27601	Washer	1
161		Not Used	
162	141-2-4539-33400	Washer	1
163	141-2-4539-38600	Washer Cut	1
164	141-2-4539-15800	Washer	2
165	141-2-4539-15700	Washer	2
166	141-2-4539-17500	Washer	2
167	141-2-4539-27800	Washer	2
168	141-2-4539-18300	Washer	1
169	141-2-7539-80600	Spacer	2
170	141-2-8529-34400	Spring Lever ASF	1
171		Not Used	
172	141-2-8529-32700	Spring Arm R/P Switch	1
173	141-2-7319-68500	Lever Eject	1
181	131-3-1302-00411	Screw, Pan Hd. C SW, +M2.0x4	3
182	141-2-4219-10600	Screw	1
183	141-2-4219-10800	Screw	3
184	141-2-4219-29600	Screw	1
185	141-2-4219-08902	Screw	3
186	141-2-4219-29900	Screw	2
187	141-2-4219-43700	Screw Azimuth	2
188	141-2-4219-33400	Screw	2

Ref. No.	Part No.	Description	Q'ty
189	103-3-1702-01211	Screw, Bind Hd. Tapping-2, +M2.0x12	1
190	141-2-4219-33200	Screw	6
191	103-3-1202-00618	Screw, Flat Hd. Tapping-2, +M2.0x6	2
192	101-3-1702-00413	Screw, Bind Hd., +M2.0x4	2
193	143-3-1202-00818	Screw, Flat Hd. Tapping-B, +M2.0x8	6
194		Not Used	
195	101-3-1302-00211	Screw, Pan Hd., +M2.0x2	1
196	141-2-4219-13201	Screw, w/Washer	4
197	143-3-1702-00618	Screw, Bind Hd. Tapping-B, +M2.0x6	6
198	141-2-4219-13201	Screw, w/Washer	1
199	101-3-1202-00418	Screw, Flat Hd., +M2.0x4	1
200	101-3-1702-00418	Screw, Bind Hd., +M2.0x4	2
201	128-3-1314-03013	PI Screw-3, Pan Hd., +M1.4x3.0	1
202	131-3-1302-00611	Screw, Pan Hd. C SW, +M2.0x6	1
203	101-3-1302-60611	Screw, Pan Hd., +M2.6x6	1
204	128-3-1314-02513	PI Screw-3, Pan Hd., +M1.4x2.5	3
205	141-2-4219-30100	Screw	2
206	101-3-1302-00311	Screw, Pan Hd., +M2.0x3	1

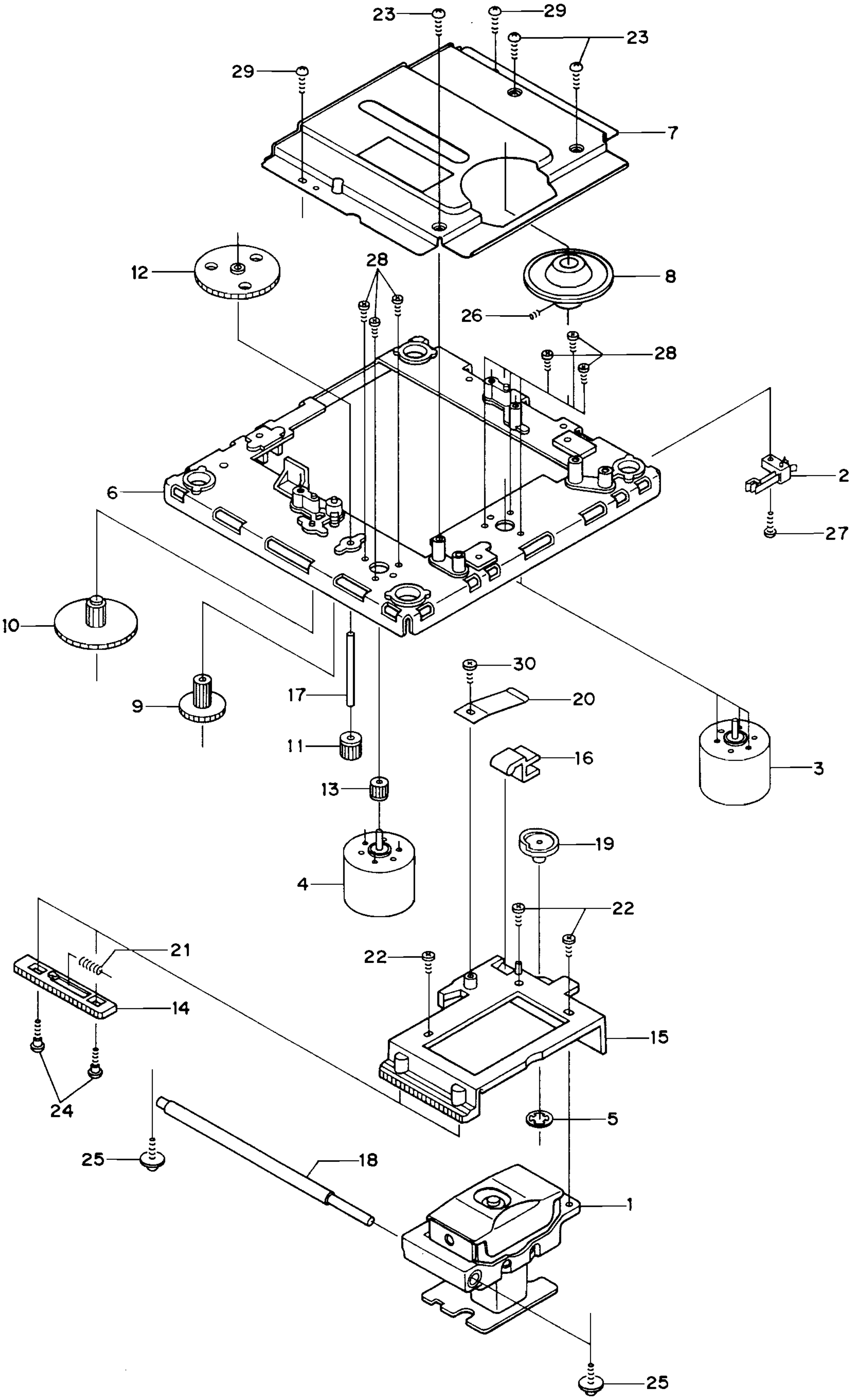
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CD FUNCTIONAL BLOCK DIAGRAM


Deemphasis
LPF
Muting
Deemphasis
LPF
Muting
Buffer amp
Buffer amp
Analog switch
Analog switch
Shift register
10 bit DAC analog shift
Buffer amp
Muting
DC-DC converter
+5V
+5V
−5V
Driver system
Digital system
Analog system
Analog system
Driver system
16K RAM
RAM address control
DAC output interface
Clock timing
C1, C2 faulty detection correction
Digital filter
Microprocessor interface time difference calculation
System control
Control switch
VCO
EFM PLL
Period detection
Focus servo
Tracking servo
Feed servo
CLV servo
Display
EFM slice level control
Focus error amp
Phase compensating servo
RF amp
Tracking error amp
Phase compensating servo
Laser control
Pickup
Laser APC
Feed servo
Disc
Disc motor
Feed motor
Phase compensating servo

CD MECHANISM EXPLODED VIEW


23
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16
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14
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25
18
1
25

CD MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	CD MECHANISM		
	4-2359-79895	Connector 2P Assy [CN505]	1
	4-2359-79933	Connector 4P Assy [CN504]	1
	141-2-4459-41900	Cushion	1
1	134-0-4009-04001	Pick-up Assy T 84.5	1
2	4-2319-78750	Leaf Switch (Pick-up IN) [S201]	1
3	4-5279-71421	Motor [M101]	1
4	4-5279-71431	Motor [M102]	1
5	131-2-4220-10507	Ring Snap	1
6	141-0-3119-26600	Chassis Assy	1
7	141-2-3229-56300	Shield Plate	1
8	141-2-5229-01100	Turntable	1
9	141-2-5519-66400	Gear Pick-up	1
10	141-2-5519-66500	Gear Load D	1
11	141-2-5519-66600	Gear Pinion	1
12	141-2-5519-66700	Gear Load S	1
13	141-2-5519-66800	Gear Motor	1
14	141-2-5519-67000	Gear Support Pick-up	1
15	141-2-7319-76000	Slide Base Pick-up	1
16	141-2-7319-76100	Slide	1
17	141-2-7519-76600	Shaft Gear Load S	1
18	141-2-7519-76700	Shaft Pick-up	1
19	141-2-8259-13800	Guide Slide Base Pl	1
20	141-2-8539-57500	Spring Plate	1
21	141-2-8559-15100	Spring Slide Base P	1
22	101-3-1702-60611	Screw, Bind Hd., +M2.6x6	3
23	143-3-1302-00618	Screw, Pan Hd. Tapping-B, +M2.0x6	3
24	141-2-4219-42300	Screw	2
25	141-2-4219-05400	Screw, w/Washer	2
26	141-2-4219-36700	Set Screw V-cone 2.0x4	1
27	143-3-1302-60811	Screw, Pan Hd. Tapping-B, +M2.6x8	1
28	128-3-1317-02518	Pl Screw-3, Pan Hd., +M1.7x2.5	6
29	143-3-1702-00618	Screw, Bind Hd. Tapping-B, +M2.0x6	2
30	143-3-1702-60611	Screw, Bind Hd. Tapping-B, +M2.6x6	1

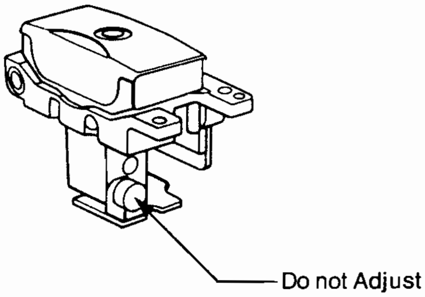
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CD ADJUSTMENT PROCEDURES

PRECAUTIONS REGARDING ADJUSTMENT

- Adjustment is performed in the indicated order.
- When adjustment is made for one item, check the other items which follow.
- The laser pick-up has already been precisely adjusted. Do not touch its mounting screws or controls.



- Refer to the "CD P.C.Board Layout Alignment Points" for the test points and adjustment controls.
- The ground point for the measurement equipment is the test point indicated as **GND**.

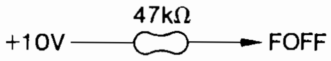
REQUIRED EQUIPMENTS

- DC Voltmeter
- Dualtrace Oscilloscope
- Frequency Counter
- Signal Generator
- Plastic Screwdriver
- Diffraction Grating Adjustment Jig
- Test Disc (SONY:YEDS4)

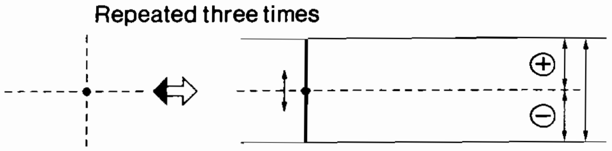
CHECKING FOCUS ERROR SIGNAL

Checking the focus error signal of the pick-up allows for an evaluation of the pick-up. Be sure this is carried out before repair.

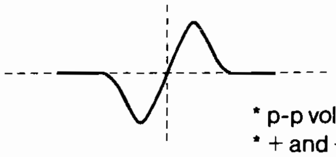
1. Turn on the power and set the unit to the STOP mode.
2. Connect an oscilloscope between test pin **TP6** (FE) and test pin **GND**. (Set the time axis to 0.5 seconds/division.)
3. Connect the +10V supply voltage to test pin **TP7** (FOFF) through a 47kΩ resistor.



4. Press the EJECT button and place the test disc YEDS4 on the turntable and close the lid.
5. The waveform shown below is displayed three times on the oscilloscope when the lid closes. Check that the p-p voltage is about 6V and that the top and bottom of the waveform are symmetrical.



(When recorded on a memory scope)



6. The waveform appears again if the POWER button is pressed again. This allows for confirmation to be made. The pick-up is faulty if confirmation cannot be made.

SETTING OF INITIAL POSITION OF VOLUME

1. The variable resistors are set to the following initial positions.

P401 (E-F BALANCE)	Mechanical center
P402 (FOCUS OFFSET)	Mechanical center
P403 (TRACKING OFFSET)	Mechanical center
P404 (TRACKING GAIN)	Mechanical center
P405 (KICK GAIN))	Mechanical center
P406 (FOCUS GAIN))	Mechanical center

FREE RUN FREQUENCY ADJUSTMENT

1. Turn on the power and set the unit to the STOP mode.
2. Connect the frequency counter between test pin **TP11** (VCO) and test pin **GND** (use probes).
3. Rotate the core of the PLL OSC coil (L406) with a plastic screwdriver so that the frequency counter indicates 4.3218MHz.

CD ADJUSTMENT PROCEDURES (Continued)

FOCUS OFFSET ADJUSTMENT

1. Turn on the power and set the unit to the STOP mode.
2. Connect a DC voltmeter and oscilloscope between test pin **TP8** (F-COIL) and test pin **GND**. Short test pin **TP7** (FOFF) and test pin **GND**.
3. Adjust P402 so that the indication on the DC voltmeter and oscilloscope is 0V±10mV.
4. Remove the short between test pin **TP7** (FOFF) and test pin **GND**.

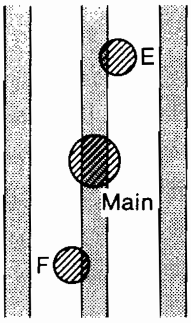
TRACKING OFFSET ADJUSTMENT

1. Turn on the power and set the unit to the STOP mode.
2. Connect a DC voltmeter and oscilloscope between test point **TP10** (T-COIL) and test pin **GND**. Short test pin **TP9** and test pin **GND**.
3. Adjust P103 so that the indication on the DC voltmeter and oscilloscope is 0V±10mV.
4. Remove the short between test pin **TP10** and test pin **GND**.

NOTE:
This adjustment should be made again after the adjustment of Tracking Gain.

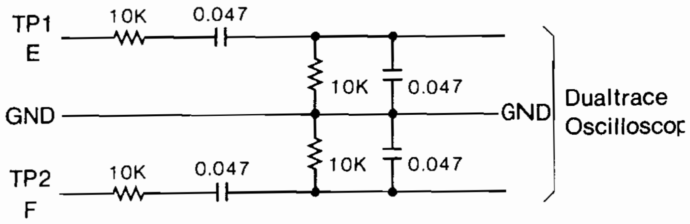
ADJUSTMENT OF DIFFRACTION GRID

This unit uses a three beam method for the laser pick-up. Diffraction grid adjustment involves adjusting the position of the E and F beams in relation to the main beam so that they are in the same line.

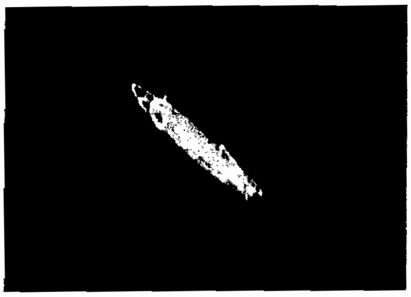


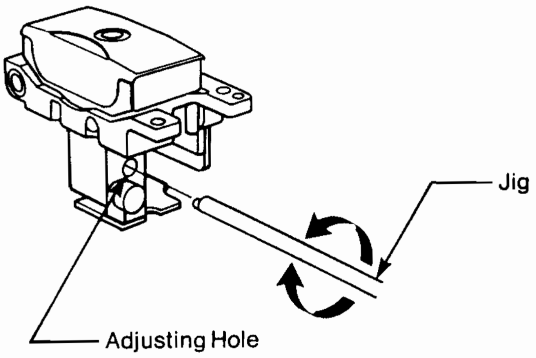
The following is the adjustment procedure. This is a precise adjustment and must be made carefully.

1. Turn on the power, place test disc YEDS4 on the turbtable and set the unit to the STOP mode.
2. Short test pins **A** and **B** through a Diode.
3. Short test pin **TP4** (TROFF) and test pin **GND**. Pass test pins **TP1** (E) and **TP2** (F) through the band pass filter, and connect to the channels of the dualtrace oscilloscope. The ground is obtained from test point **GND**.



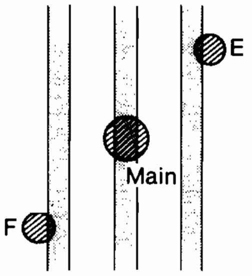
4. Press the PLAY button. The TRACK/INDEX indication is "1" and the disc begins to rotate. The unit is rotating in this state with the tracking servo turned off.
5. Observe the resurge waveform of the waveform indicated on the oscilloscope and insert the adjustment jig into the diffraction grid holes to adjust the diffraction grid so that the phase difference is 180°.





CD ADJUSTMENT PROCEDURES(Continued)

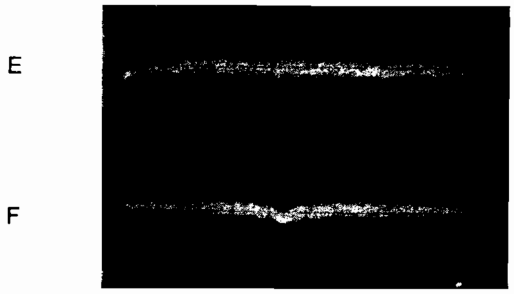
6. Even if the phase difference is 180° in the above step, the E and F beams may be mistakenly on two different beam pit lines as shown below.



Be sure that the E and F beams are in the same pit line for subsequent adjustments.

7. Remove the short between test pin **TP4** and the **GND,** and **A** and **B**, and play back the fourth selection on YEDS4.

8. Observe the waveform of the signal between test pin **TP1** (E) and test pin TP2 (F) using the dualtrace oscilloscope (Monitored in ALT mode). The beam **E** and beam **F** are in the same pit line if the trigger of waveform **F** is approximately 25μs behind the point (Position where waveform hollows out) where the waveform **E** is triggered.



The two beam are on the same pit line.
(100mV/DIV : 5μSec/DIV)

When observation of the waveform is difficult, the trigger level can be varied. When the beams are not in the same line, return to step 1, and rotate the adjustment jig at the 180° point. Confirm that the beams are in line at the 180° point. Repeat steps 1 to 7 until confirmation of this is possible.

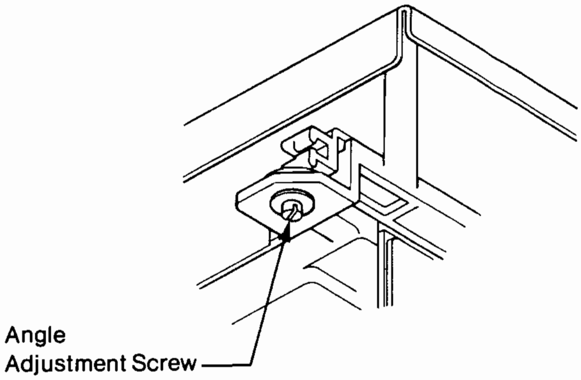
Note:
When the pick-up is replaced, it is adjusted as a unit, and beams E and F can be brought in line and the phase made 180° by a slight adjustment. Slightly rotate the adjustment jig when making adjustment. If the beams come out of line, it is difficult to bring them back into the same pit line.

ADJUSTMENT OF PICK-UP ANGLE

1. Mount the test disc YEDS4 on the turntable.

2. Turn on the power and play back the fourth selection.

3. Connect the oscilloscope between test pin **TP12** (HF) and test pin **GND**. Monitor the waveform of **TP12** (HF) and rotate the angle adjustment screw so that the waveform is at its maximum.

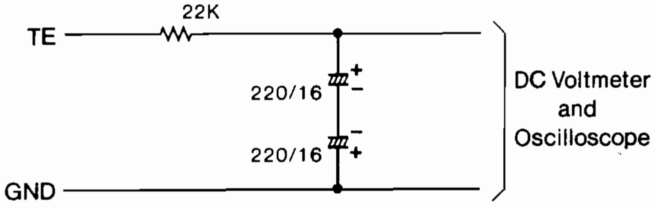


E-F BALANCE ADJUSTMENT

1. Turn on the power and mount test disc YEDS4 on the turntable. Set the unit to the STOP mode.

2. Short test pins **A** and **B** through a Diode.

3. Short test pin **TP4** (TROFF) and test pin **GND**, and connect a DC voltmeter and oscilloscope to test pin **TP3** (TE) through the low-pass filter shown below.



4. Press the PLAY button. The TRACK/INDEX indication is "1" and the disc begins to rotate. The unit is rotating in this state with the tracking servo turned off.

5. Adjust P401 so that the DC voltmeter and oscilloscope is 0V±15mV.

6. Remove the short between test pin **TP4** and the **GND**, and **A** and **B**.

CD ADJUSTMENT PROCEDURES (Continued)

CONFIRMING JITTER

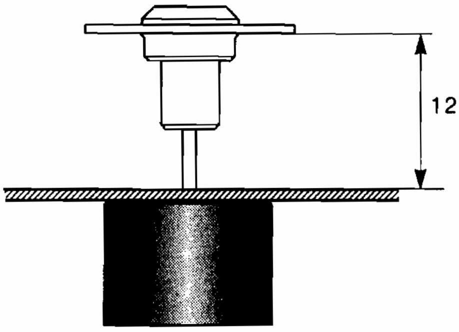
This procedure can be omitted in the case that no jitter counter is equipped.

1. As same in the adjustment of the pickup angle, play the fourth tune of the YEDS4.
2. Connecting the jitter counter to the test point **EFM** (TP18), make sure that the value of 3T is less than 25nSec.
3. In the case of 25nSec or more, adjust again the Pick-up Angle and adjust P402.

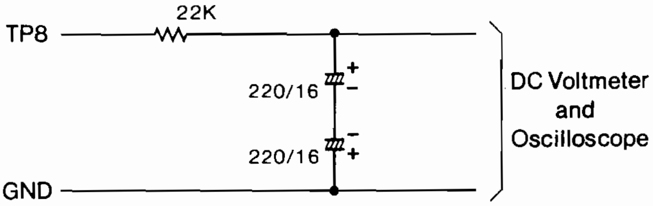
ADJUSTMENT OF TURNTABLE HEIGHT

This adjustment must be made when the motor is replaced.

1. Attach the turntable so that its bottom surface is 12.5mm from the top of the chassis.



2. Connect test pin **TP8** (T-COIL) to a DC voltmeter and oscilloscope through the low-pass filter.

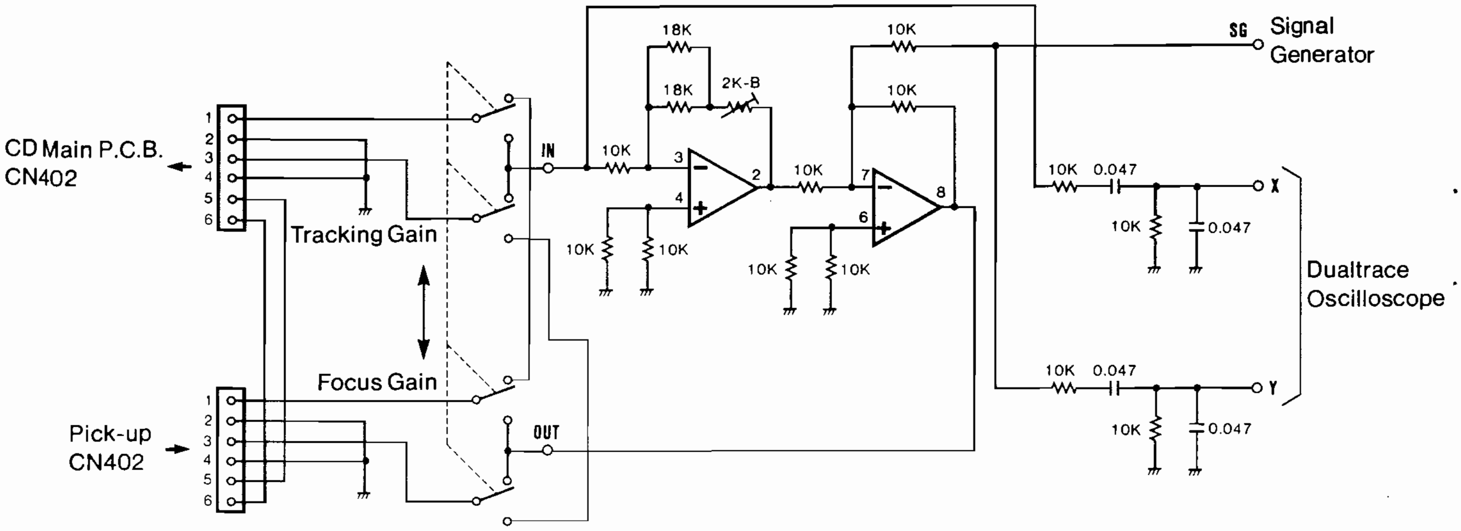


3. Turn on the power and play back the first selection on test disc YEDS4.
4. Readjust the height of the turntable if the reading on the DC voltmeter is not in the range of 0V±0.25V. (Increase the height of the turntable when the voltmeter reading is positive, and decrease it when negative.)

ADJUSTMENT OF FOCUS GAIN AND TRACKING GAIN

The measurement circuit shown below is necessary for accurate adjustment of the focus and tracking gain. If this circuit cannot be made, make adjustments using the simplified procedure.

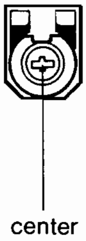
CD ADJUSTMENT PROCEDURES (Continued)


CD Main P.C.B.
CN402
Pick-up
CN402
1
2
3
4
5
6
Tracking Gain
Focus Gain
IN
OUT
18K
18K
2K-B
10K
10K
10K
10K
10K
10K
10K
10K
10K
SG
Signal
Generator
10K
0.047
10K
0.047
X
10K
0.047
10K
0.047
Y
Dualtrace
Oscilloscope

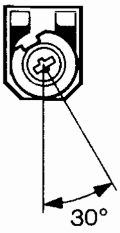
- Remove connector CN402 from the pick-up and connect the measurement circuit between the PCB and pick-up.
- The IC used is TA7256P
- VR control 2kΩ-B shorts **IN** and **SG**. 1kHz 1Vp-p is supplied from the signal generator, and adjustment is made for minimum output from **OUT**.

Simplified adjustment procedure

- Focus gain adjustment
  P406 is set to a mechanical center as shown in the diagram below.



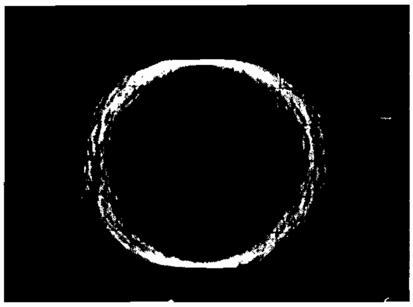
- Tracking gain adjustment
  P404 is set to a position 30° from its mechanical center as shown in the diagram below.



Precise adjustment procedure

- Focus gain adjustment

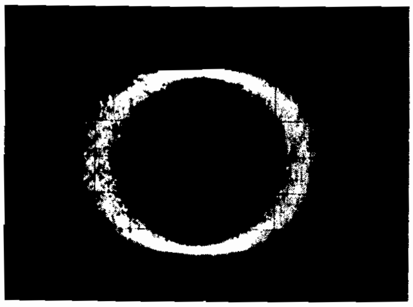
1. Connect the measurement circuit shown above, turn on the power, and mount the test disc YEDS4.
2. Play back the first selection on the test disc, and apply a 1,100Hz 0.5Vp-p signal from the signal generator.
3. Observe the resurge waveforms on the oscilloscope, and adjust P406 so that the phase difference of outputs **X** and **Y** from the measurement circuit is 90°.



CD ADJUSTMENT PROCEDURES (Continued)

- Tracking gain adjustment

1. Adjustment is made in the same manner as for focus gain. The input from the frequency generator is set to 1,500Hz, 0.5Vp-p, and P404 is adjusted so that the phase difference is 90°.



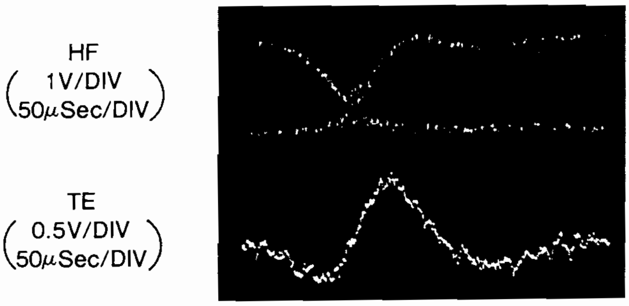
ADJUSTMENT OF KICK GAIN

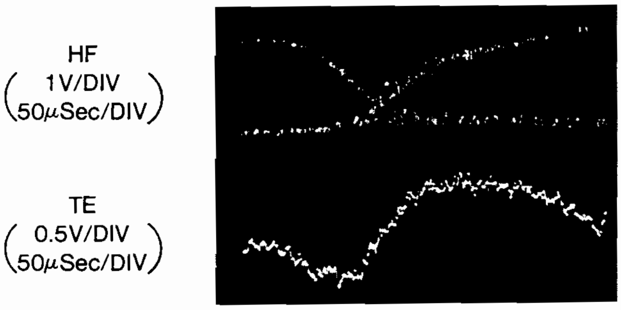
1. Load the test disc YEDS4 on the turntable.

2. Set the oscilloscope at the NORMAL TRIG. and connect the **TP14** (TRHD) to the external trigger terminal. Then, connect the channels, 1 and 2, to the test pin, **TP12** (HF) and **TP3** (TE), respectively.

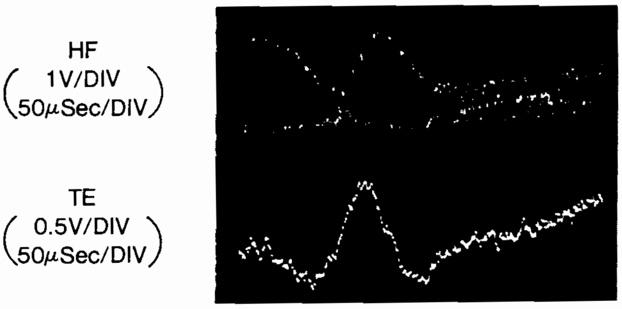
3. Switch on the power. In the state of playing the first tune, make it pause and observe the waveforms of **TP12** (HF) and **TP3** (TE) triggered by **TP14** (TRHD).

4. Adjust the P405 for making a track jump between 1 and 1.5 track.



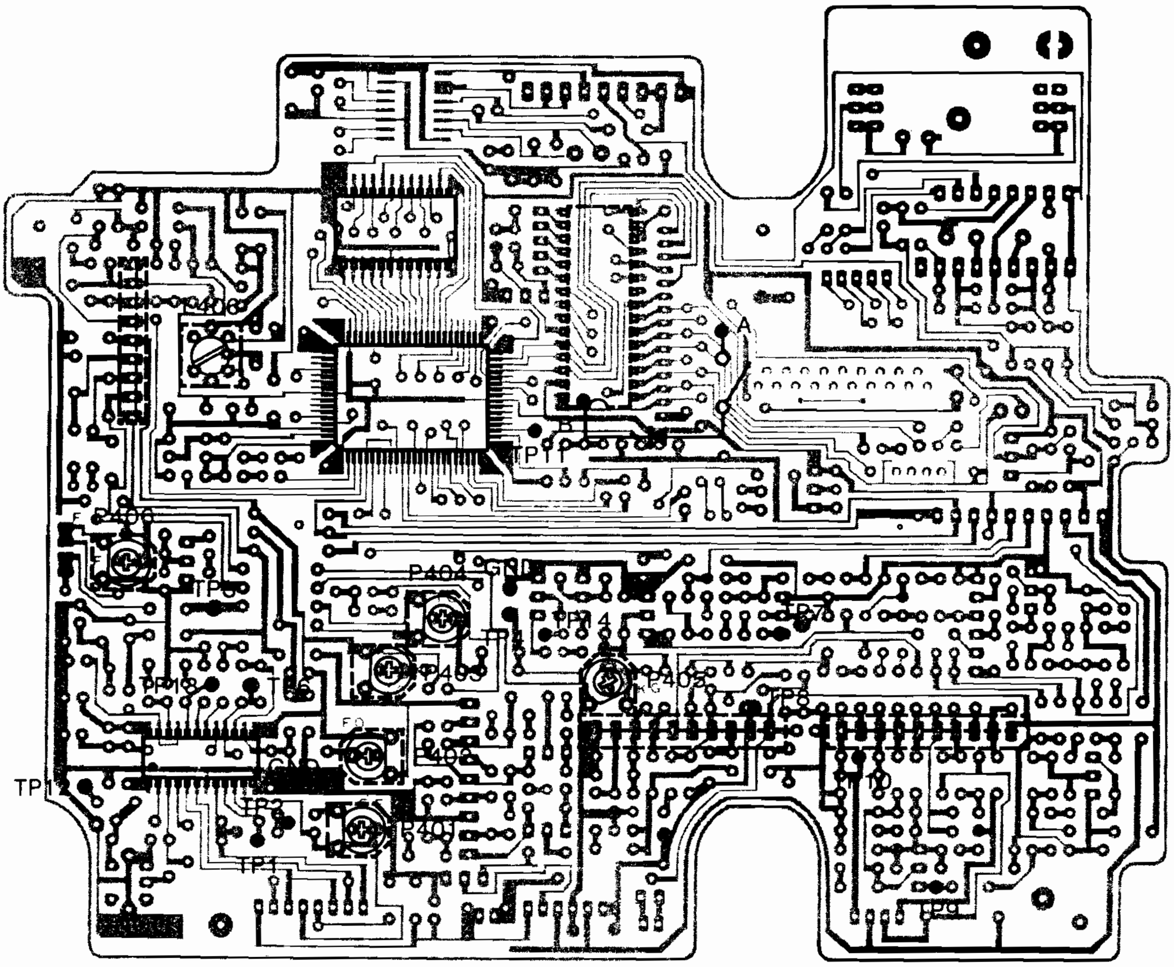


Waveform showing Short Kick Gain



Waveform showing Excessive Kick Gain

CD P.C.BOARD LAYOUT
ALIGNMENT POINTS
(BOTTOM VIEW)


A
B
TP11
P400
TP5
P404
GND
TP14
TP4
P403
P405
TP7
TP8
TP13
TP6
P402
GND
TP12
TP2
P401
TP1
TP10
TP9

SAFETY INTERLOCK

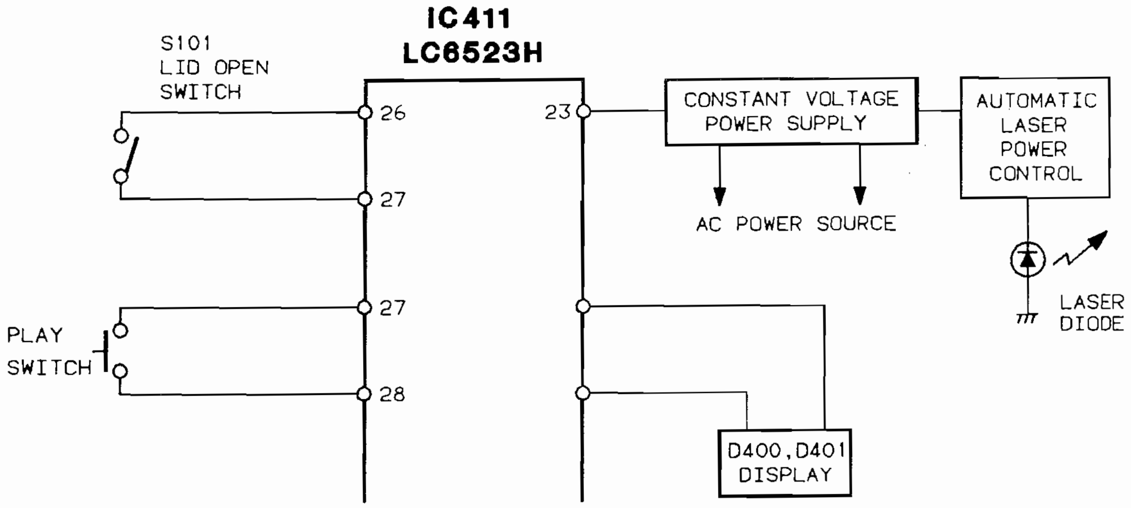
The Digital Compact Disc Player reads the disc signal by detecting the laser beam. It must be avoided for the human body to directly receive the beam. Especialy human eyes are badly affected by the beam. Therefore, the unit is equipped with an interlock to prevent the unnecessary laser outputs.

The laser outputs are controled by the injection or cutoff of the constant voltage source to the laser diode with Pin 23 of IC 411 (LC6523H). When Pin 23 is in "L" (Low) level, the laser emits the beam. When Pin 23 is in "H" (High) level, the laser does not emit the beam.
Pin 23 is set in "L" level when the unit is loaded with the disc and it reads the index signals or when the unit is set in the play mode after that. When the unit reads the index signals and the following two conditions are met, the laser emits the beam.

1) When the Lid Disc is closed.
2) The pickup is located at the area of the minimum interna circumference.

After the above conditions are met and the index signals have been read, the laser emits the beam when the following two conditions are met.

1) When the PLAY button is pressed.
2) When the PLAY indicator is ON.


IC411
LC6523H
S101
LID OPEN
SWITCH
26
27
27
28
23
PLAY
SWITCH
CONSTANT VOLTAGE
POWER SUPPLY
AC POWER SOURCE
AUTOMATIC
LASER
POWER
CONTROL
LASER
DIODE
D400, D401
DISPLAY

P.C.BOARD PARTS LIST

POWER SUPPLY P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
81	141-0-1939-17591	Power Supply P.C.B. Assy	1
	⚠ 4-2359-73680	AC/DC Power Socket	1
CN101	4-2359-79736	Connector 2P Assy	1
D307	202-5-2500-13543	Diode, DS 135	1
D308	202-5-2500-13543	Diode, DS 135	1
D309	202-5-2500-13543	Diode, DS 135	1
D310	202-5-2500-13543	Diode, DS 135	1
C343	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C344	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C345	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C346	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1

ASF LED P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
82	141-0-1939-17600	ASF LED P.C.B. Assy	1
	141-2-3689-14900	Holder LED ASF	1
CN102	4-2359-79802	Connector 5P Assy	1
S101	4-2319-75560	Touch Switch	1
D311	D00- - -SLP- -173B-	LED, SLP 173 B 01 (ASF)	1
D312	D00- - -SLP- -173B-	LED, SLP 173 B 01 (OPR/BATT)	1
D313	D00- - -SLP- -173B-	LED, SLP 173 B 01 (DOLBY NR)	1
R324	401 028 3200	CARBON 1K JA 1/8W	1
R325	401 028 3200	CARBON 1K JA 1/8W	1

EQ P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
83	141-0-1939-17650	EQ P.C.B. Assy	1
CN107	4-2369-75000	Plug 6P	1
VR301	4-2229-75790	Slide Volume (W-100kΩ x 2) (10kHz)	1
VR302	4-2229-75790	Slide Volume (W-100kΩ x 2) (1kHz)	1
VR303	4-2229-75790	Slide Volume (W-100kΩ x 2) (100Hz)	1
Q103	203-5-5000-53674	Transistor, 2SC 536	1
Q203	203-5-5000-53674	Transistor, 2SC 536	1
C119	CC3-3-1500-KE01R	Ceramic 330pF 50V ±10%	1
C120	CC1-8-2500-KE00C	Ceramic 0.0018μF 50V ±10%	1
C121	CC2-7-2500-KE00C	Ceramic 0.0027μF 50V ±10%	1
C122	CM8-2-2500-K00SV	Mylar 0.0082μF 50V ±10%	1
C123	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C124	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C125	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C219	CC3-3-1500-KE01R	Ceramic 330pF 50V ±10%	1
C220	CC1-8-2500-KE00C	Ceramic 0.0018μF 50V ±10%	1
C221	CC2-7-2500-KE00C	Ceramic 0.0027μF 50V ±10%	1
C222	CM8-2-2500-K00SV	Mylar 0.0082μF 50V ±10%	1
C223	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C224	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C225	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C309	CD2-2-7160-0006V	Electrolytic 220μF 16V	1
R129	401 031 6601	CARBON 4.7K JA 1/8W	1
R130	401 031 6601	CARBON 4.7K JA 1/8W	1
R131	401 032 4606	CARBON 6.8K JA 1/8W	1
R132	401 031 6601	CARBON 4.7K JA 1/8W	1
R133	401 031 6601	CARBON 4.7K JA 1/8W	1
R134	401 030 0709	CARBON 22K JA 1/8W	1
R135	401 029 5500	CARBON 18K JA 1/8W	1
R136	401 029 5500	CARBON 18K JA 1/8W	1
R137	401 030 9702	CARBON 33K JA 1/8W	1
R138	401 028 4702	CARBON 1M JA 1/8W	1
R139	401 031 2405	CARBON 3.9K JA 1/8W	1
R158	401 031 7202	CARBON 47K JA 1/8W	1
R229	401 031 6601	CARBON 4.7K JA 1/8W	1
R230	401 031 6601	CARBON 4.7K JA 1/8W	1
R231	401 032 4606	CARBON 6.8K JA 1/8W	1
R232	401 031 6601	CARBON 4.7K JA 1/8W	1
R233	401 031 6601	CARBON 4.7K JA 1/8W	1
R234	401 030 0709	CARBON 22K JA 1/8W	1
R235	401 029 5500	CARBON 18K JA 1/8W	1
R236	401 029 5500	CARBON 18K JA 1/8W	1
R237	401 030 9702	CARBON 33K JA 1/8W	1
R238	401 028 4702	CARBON 1M JA 1/8W	1
R239	401 031 2405	CARBON 3.9K JA 1/8W	1
R258	401 031 7202	CARBON 47K JA 1/8W	1

AMPLIFIER P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
84	141-0-1939-17661	Amplifier P.C.B. Assy	1
	141-2-3689-09600	Radiator IC	1
	4-2352-01940	Fuse Clip	2
	141-0-1939-17670	DC/DC Converter	1
CN1	4-2359-79862	Connector 4P Assy	1
CN101	4-2369-73790	Connector 2P	1
CN102	4-2369-73360	Connector 3P	1
CN103	4-2369-73370	Connector 4P	1
CN104	4-2369-75100	Plug 4P	1
CN105	4-2369-73380	Connector 5P	1
CN106	4-2369-74750	Plug 8P	1
CN107	4-2359-79476	Connector 6P Assy	1
F1	⚠ 4-2349-70590	Fuse (1 A)	1
F301	4-2349-70570	Protector, ICP-N15	1
J301	4-2359-73470	1P Jack (MIC)	1
J302	4-2352-01651	RCA Pin Jack 4P (LINE IN, LINE OUT)	1
J303	4-2359-75701	Jack 5P with Switch (HEADPHONES)	1
J304	4-2359-75701	Jack 5P with Switch (HEADPHONES)	1
S301	4-2319-75590	Slide Switch (BEAT)	1
S302	4-2319-71805	Slide Switch (RECORD/PLAY)	1
S303	4-2319-75900	Push Switch (TAPE)	1
S304	4-2319-75712	Push Switch (DOLBY)	1
S305	4-2319-75713	Push Switch (REC MUTE)	1
S306	4-2319-79500	Lever Switch (FUNCTION)	1
L101	4-2729-70480	Coil (33mH)	1
L102	4-2729-70580	Coil (12mH)	1
L103	4-2729-70980	Dolby Filter	1
L201	4-2729-70480	Coil (33mH)	1
L202	4-2729-70580	Coil (12mH)	1
L203	4-2729-70980	Dolby Filter	1
L301	4-2539-70301	Micro Inductor	1
L302	4-2729-70950	Coil (470μH)	1
L303	4-2729-70940	Coil (47μH)	1
L304	4-2729-70940	Coil (47μH)	1
P101	4-2229-76565	Potentiometer (B-200Ω)	1
P102	4-2229-76562	Potentiometer (B-20kΩ)	1
P103	4-2229-76564	Potentiometer (B-30kΩ)	1
P201	4-2229-76565	Potentiometer (B-200Ω)	1
P202	4-2229-76562	Potentiometer (B-20kΩ)	1
P203	4-2229-76564	Potentiometer (B-30kΩ)	1
VR1	4-2229-76810	Volume (B-50kΩ x 2)	1
D101	202-5-1410-00110	Diode, GMA 01	1
D102	202-5-1410-00110	Diode, GMA 01	1
D201	202-5-1410-00110	Diode, GMA 01	1
D202	202-5-1410-00110	Diode, GMA 01	1
D301	205-5-9040-44210	Diode, DS 442	1
D302	202-5-3200-03911	Zener Diode, GZA3.9X	1
0303	202-5-1410-00110	Diode, GMA 01	1
D304	202-5-1410-00110	Diode, GMA 01 BT	1
D305	4-2029-75420	Zener Diode, MTZ J 8.2B	1
D306	4-2029-75410	Zener Diode, MTZ J 6.8B	1
0314	4-2029-74420	Diode, 1SS 147	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
D315	202-5-1410-00110	Diode, GMA 01				1
D316	202-5-1410-00110	Diode, GMA 01				1
D317	212-5-4390-13510	Diode, DS 135				1
IC301	206-5-0793-16020	IC, LA 3160 T				1
IC302	4-2069-73840	IC, NE 657 N				1
IC303	206-5-1984-50510	IC, LA 4505				1
Q101	203-5-5000-53674	Transistor, 2SC536				1
Q102	203-5-5083-33165	Transistor, 2SC 3331				1
Q104	203-5-5000-53674	Transistor, 2SC536				1
Q105	203-5-5000-53674	Transistor, 2SC536				1
Q106	203-5-5000-53674	Transistor, 2SC536				1
Q201	203-5-5000-53674	Transistor, 2SC536				1
Q202	203-5-5083-33165	Transistor, 2SC 3331				1
Q204	203-5-5000-53674	Transistor, 2SC536				1
Q205	203-5-5000-53674	Transistor, 2SC536				1
Q206	203-5-5000-53674	Transistor, 2SC536				1
Q301	4-2039-70760	Transistor, 2SC 1583				1
Q302	203-5-5000-53674	Transistor, 2SC536				1
Q303	203-5-5000-53674	Transistor, 2SC536				1
Q304	203-5-5000-53674	Transistor, 2SC536				1
Q305	203-5-4921-01270	Transistor, 2SD 1012				1
Q306	203-5-7330-61260	Transistor, 2SD 612				1
Q307	203-5-4570-73460	Transistor, 2SD 734				1
Q308	203-5-5000-53674	Transistor, 2SC536				1
Q309	203-5-5000-53674	Transistor, 2SC536				1
Q310	203-5-5000-53674	Transistor, 2SC536				1
Q311	203-5-5000-53674	Transistor, 2SC536				1
Q312	203-5-7200-60860	Transistor, 2SA 608				1
C101	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C102	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C103	CM3-9-3500-K00SV	Mylar	0.039µF	50V	±10%	1
C104	CC3-3-1500-KE01R	Ceramic	330pF	50V	±10%	1
C105	CD4-7-6100-0001V	Electrolytic	47µF	10V		1
C106	CD4-7-5250-0001V	Electrolytic	4.7µF	25V		1
C107	CD4-7-4500-0001V	Electrolytic	0.47µF	50V		1
C108	CC1-0-1500-KE01R	Ceramic	100pF	50V	±10%	1
C109	CM4-7-2500-K00SV	Mylar	0.0047µF	50V	±10%	1
C110	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C111	CD4-7-4500-0001V	Electrolytic	0.47µF	50V		1
C112	CM4-7-2500-K00SV	Mylar	0.0047µF	50V	±10%	1
C113	CM3-3-3500-K00SV	Mylar	0.033µF	50V	±10%	1
C114	CD4-7-5250-0001V	Electrolytic	4.7µF	25V		1
C115	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C116	CM4-7-3500-K00SV	Mylar	0.047µF	50V	±10%	1
C117	CM3-3-4500-J00TV	Mylar	0.33µF	50V	±5%	1
C118	CM1-0-4500-J00TV	Mylar	0.1µF	50V	±5%	1
C126	CC1-8-2500-KE00C	Ceramic	0.0018µF	50V	±10%	1
C127	CI4-7-3250-KF00C	Boundary	0.047µF	25V	±10%	1
C128	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C129	CC4-7-1500-KE01R	Ceramic	470pF	50V	±10%	1
C130	CD1-0-7100-0006V	Electrolytic	100µF	10V		1
C131	CC4-7-A500-KD01R	Ceramic	4.7pF	50V	±10%	1
C132	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C133	CD4-7-6160-0006V	Electrolytic	47µF	16V		1
C134	CD1-0-8160-0006V	Electrolytic	1000µF	16V		1
C135	CM1-5-4500-J00TV	Mylar	0.15µF	50V	±5%	1
C136	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C137	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C139	CM2-2-3500-K00SV	Mylar	0.022µF	50V	±10%	1
C140	CM1-0-3500-K00SV	Mylar	0.01µF	50V	±10%	1
C141	CC1-0-1500-KE01R	Ceramic	100pF	50V	±10%	1
C142	CC3-3-1500-KE01R	Ceramic	330pF	50V	±10%	1
C201	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C202	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C203	CM3-9-3500-K00SV	Mylar	0.039µF	50V	±10%	1
C204	CC3-3-1500-KE01R	Ceramic	330pF	50V	±10%	1
C205	CD4-7-6100-0001V	Electrolytic	47µF	10V		1
C206	CD4-7-5250-0001V	Electrolytic	4.7µF	25V		1
C207	CD4-7-4500-0001V	Electrolytic	0.47µF	50V		1
C208	CC1-0-1500-KE01R	Ceramic	100pF	50V	±10%	1
C209	CM4-7-2500-K00SV	Mylar	0.0047µF	50V	±10%	1
C210	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C211	CD4-7-4500-0001V	Electrolytic	0.47µF	50V		1
C212	CM4-7-2500-K00SV	Mylar	0.0047µF	50V	±10%	1
C213	CM3-3-3500-K00SV	Mylar	0.033µF	50V	±10%	1
C214	CD4-7-5250-0001V	Electrolytic	4.7µF	25V		1
C215	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C216	CM4-7-3500-K00SV	Mylar	0.047µF	50V	±10%	1
C217	CM3-3-4500-J00TV	Mylar	0.33µF	50V	±5%	1
C218	CM1-0-4500-J00TV	Mylar	0.1µF	50V	±5%	1
C226	CC1-8-2500-KE00C	Ceramic	0.0018µF	50V	±10%	1
C227	CI4-7-3250-KF00C	Boundary	0.047µF	25V	±10%	1
C228	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C229	CC4-7-1500-KE01R	Ceramic	470pF	50V	±10%	1
C230	CD1-0-7100-0006V	Electrolytic	100µF	10V		1
C231	CC4-7-A500-KD01R	Ceramic	4.7pF	50V	±10%	1
C232	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C233	CD4-7-6160-0006V	Electrolytic	47µF	16V		1
C234	CD1-0-8160-0006V	Electrolytic	1000µF	16V		1
C235	CM1-5-4500-J00TV	Mylar	0.15µF	50V	±5%	1
C236	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C237	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C239	CM2-2-3500-K00SV	Mylar	0.022µF	50V	±10%	1
C240	CM1-0-3500-K00SV	Mylar	0.01µF	50V	±10%	1
C241	CC1-0-1500-KE01R	Ceramic	100pF	50V	±10%	1
C242	CC3-3-1500-KE01R	Ceramic	330pF	50V	±10%	1
C301	CI4-7-2160-NF01R	Boundary	0.0047µF	16V	±30%	1
C302	CD1-0-4500-0001V	Electrolytic	0.1µF	50V		1
C303	CD3-3-7100-0006V	Electrolytic	330µF	10V		1
C304	CD4-7-6100-0001V	Electrolytic	47µF	10V		1
C305	CD2-2-6100-0001V	Electrolytic	22µF	10V		1
C306	CD2-2-7100-0006V	Electrolytic	220µF	10V		1
C307	CD4-7-7160-0006V	Electrolytic	470µF	16V		1
C308	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C309	CD2-2-7160-0006V	Electrolytic	220µF	16V		1
C310	CD1-0-7100-0006V	Electrolytic	100µF	10V		1
C311	CD2-2-7160-0006V	Electrolytic	220µF	16V		1
C312	CD4-7-8250-0006V	Electrolytic	4700µF	25V		1
C313	CD4-7-7100-0006V	Electrolytic	470µF	10V		1
C314	CD4-7-7100-0006V	Electrolytic	470µF	10V		1
C315	CD4-7-7100-0006V	Electrolytic	470µF	10V		1
C316	CD4-7-7100-0006V	Electrolytic	470µF	10V		1
C317	CD4-7-6160-0006V	Electrolytic	47µF	16V		1
C318	CD2-2-7160-0006V	Electrolytic	220µF	16V		1
C319	CD4-7-7160-0006V	Electrolytic	470µF	16V		1
C320	CD2-2-7100-0006V	Electrolytic	220µF	10V		1
C321	CD4-7-7100-0006V	Electrolytic	470µF	10V		1
C323	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C324	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C325	CD3-3-5500-0001V	Electrolytic	3.3µF	50V		1
C326	CD1-0-7160-0006V	Electrolytic	100µF	16V		1
C327	CD1-0-7160-0006V	Electrolytic	100µF	16V		1
C328	CD2-2-5500-0001V	Electrolytic	2.2µF	50V		1
C329	CP2-7-1101-J002V	Polypropylen	270pF	100V	±5%	1
C330	CP8-2-1101-J002V	Polypropylen	820pF	100V	±5%	1
C331	CM1-0-3500-K00SV	Mylar	0.01µF	50V	±10%	1
C332	CP1-2-3101-G002V	Polypropylen	0.012µF	100V	±2%	1
C333	CM1-0-4500-J00TV	Mylar	0.1µF	50V	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
C334	CC2-7-1500-KE01R	Ceramic 270pF 50V ±10%	1
C335	CD4-7-5250-0001V	Electrolytic 4.7μF 25V	1
C336	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C337	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
C338	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1
C339	CD2-2-6100-0001V	Electrolytic 22μF 10V	1
C340	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
C341	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1
C347	CC1-0-1500-KE01R	Ceramic 100pF 50V ±10%	1
C348	CC1-0-1500-KE01R	Ceramic 100pF 50V ±10%	1
R101	401 029 5005	CARBON 1.8K JA 1/8W	1
R102	401 028 9103	CARBON 1.3K JA 1/8W	1
R103	401 032 9205	CARBON 82K JA 1/8W	1
R104	401 028 3200	CARBON 1K JA 1/8W	1
R105	401 030 4202	CARBON 2.7K JA 1/8W	1
R106	401 028 3705	CARBON 10K JA 1/8W	1
R107	401 030 0204	CARBON 2.2K JA 1/8W	1
R108	401 031 6601	CARBON 4.7K JA 1/8W	1
R109	401 030 0709	CARBON 22K JA 1/8W	1
R110	401 032 0103	CARBON 560 JA 1/8W	1
R111	401 029 1502	CARBON 15K JA 1/8W	1
R112	401 028 4207	CARBON 100K JA 1/8W	1
R113	401 029 1502	CARBON 15K JA 1/8W	1
R114	401 028 4207	CARBON 100K JA 1/8W	1
R115	401 031 7202	CARBON 47K JA 1/8W	1
R116	401 030 2505	CARBON 2.4K JA 1/8W	1
R117	401 030 9207	CARBON 3.3K JA 1/8W	1
R118	401 028 2609	CARBON 100 JA 1/8W	1
R119	401 032 0608	CARBON 5.6K JA 1/8W	1
R120	401 030 0204	CARBON 2.2K JA 1/8W	1
R121	401 028 3705	CARBON 10K JA 1/8W	1
R122	401 032 4606	CARBON 6.8K JA 1/8W	1
R123	401 030 5209	CARBON 270K JA 1/8W	1
R124	401 029 6002	CARBON 180K JA 1/8W	1
R125	401 030 0204	CARBON 2.2K JA 1/8W	1
R126	401 030 0709	CARBON 22K JA 1/8W	1
R127	401 030 0204	CARBON 2.2K JA 1/8W	1
R128	401 028 3705	CARBON 10K JA 1/8W	1
R140	401 031 6601	CARBON 4.7K JA 1/8W	1
R141	401 031 9602	CARBON 56 JA 1/8W	1
R142	401 023 0709	CARBON 82 JA 1/4W	1
R143	401 023 0709	CARBON 82 JA 1/4W	1
R144	401 030 0709	CARBON 22K JA 1/8W	1
R145	401 028 3200	CARBON 1K JA 1/8W	1
R146	401 030 9207	CARBON 3.3K JA 1/8W	1
R147	401 029 5005	CARBON 1.8K JA 1/8W	1
R148	401 028 3200	CARBON 1K JA 1/8W	1
R149	401 016 4806	CARBON 22K JA 1/4W	1
R150	401 030 0204	CARBON 2.2K JA 1/8W	1
R151	401 031 0203	CARBON 330K JA 1/8W	1
R153	401 031 8308	CARBON 5.6 JA 1/8W	1
R154	401 032 8703	CARBON 8.2K JA 1/8W	1
R155	401 029 0406	CARBON 150 JA 1/8W	1
R156	401 028 3705	CARBON 10K JA 1/8W	1
R157	401 028 7604	CARBON 12K JA 1/8W	1
R201	401 029 5005	CARBON 1.8K JA 1/8W	1
R202	401 028 9103	CARBON 1.3K JA 1/8W	1
R203	401 032 9205	CARBON 82K JA 1/8W	1
R204	401 028 3200	CARBON 1K JA 1/8W	1
R205	401 030 4202	CARBON 2.7K JA 1/8W	1
R206	401 028 3705	CARBON 10K JA 1/8W	1
R207	401 030 0204	CARBON 2.2K JA 1/8W	1
R208	401 031 6601	CARBON 4.7K JA 1/8W	1
R209	401 030 0709	CARBON 22K JA 1/8W	1
R210	401 032 0103	CARBON 560 JA 1/8W	1
R211	401 029 1502	CARBON 15K JA 1/8W	1
R212	401 028 4207	CARBON 100K JA 1/8W	1
R213	401 029 1502	CARBON 15K JA 1/8W	1
R214	401 028 4207	CARBON 100K JA 1/8W	1
R215	401 031 7202	CARBON 47K JA 1/8W	1
R216	401 030 2505	CARBON 2.4K JA 1/8W	1
R217	401 030 9207	CARBON 3.3K JA 1/8W	1
R218	401 028 2609	CARBON 100 JA 1/8W	1
R219	401 032 0608	CARBON 5.6K JA 1/8W	1
R220	401 030 0204	CARBON 2.2K JA 1/8W	1
R221	401 028 3705	CARBON 10K JA 1/8W	1
R222	401 032 4606	CARBON 6.8K JA 1/8W	1
R223	401 030 5209	CARBON 270K JA 1/8W	1
R224	401 029 6002	CARBON 180K JA 1/8W	1
R225	401 030 0204	CARBON 2.2K JA 1/8W	1
R226	401 030 0709	CARBON 22K JA 1/8W	1
R227	401 030 0204	CARBON 2.2K JA 1/8W	1
R228	401 028 3705	CARBON 10K JA 1/8W	1
R240	401 031 6601	CARBON 4.7K JA 1/8W	1
R241	401 031 9602	CARBON 56 JA 1/8W	1
R242	401 023 0709	CARBON 82 JA 1/4W	1
R243	401 023 0709	CARBON 82 JA 1/4W	1
R244	401 030 0709	CARBON 22K JA 1/8W	1
R245	401 028 3200	CARBON 1K JA 1/8W	1
R246	401 030 9207	CARBON 3.3K JA 1/8W	1
R247	401 029 5005	CARBON 1.8K JA 1/8W	1
R248	401 028 3200	CARBON 1K JA 1/8W	1
R249	401 016 4806	CARBON 22K JA 1/4W	1
R250	401 030 0204	CARBON 2.2K JA 1/8W	1
R251	401 031 0203	CARBON 330K JA 1/8W	1
R253	401 031 8308	CARBON 5.6 JA 1/8W	1
R254	401 032 8703	CARBON 8.2K JA 1/8W	1
R255	401 029 0406	CARBON 150 JA 1/8W	1
R256	401 028 3705	CARBON 10K JA 1/8W	1
R257	401 028 7604	CARBON 12K JA 1/8W	1
R301	401 030 9207	CARBON 3.3K JA 1/8W	1
R302	401 031 6601	CARBON 4.7K JA 1/8W	1
R303	401 028 3200	CARBON 1K JA 1/8W	1
R304	401 028 3705	CARBON 10K JA 1/8W	1
R305	401 030 0204	CARBON 2.2K JA 1/8W	1
R306	401 030 8705	CARBON 330 JA 1/8W	1
R307	401 020 4700	CARBON 4.7M JA 1/4W	1
R308	401 031 9008	CARBON 5.1K JA 1/8W	1
R309	401 022 3107	CARBON 6.8K JA 1/4W	1
R310	401 030 9207	CARBON 3.3K JA 1/8W	1
R311	401 030 0709	CARBON 22K JA 1/8W	1
R312	401 029 9102	CARBON 22 JA 1/8W	1
R313	401 016 4806	CARBON 22K JA 1/4W	1
R314	401 030 0709	CARBON 22K JA 1/8W	1
R315	401 029 9706	CARBON 220 JA 1/8W	1
R316	401 030 0204	CARBON 2.2K JA 1/8W	1
R317	401 032 0103	CARBON 560 JA 1/8W	1
R318	401 032 0103	CARBON 560 JA 1/8W	1
R319	401 030 9702	CARBON 33K JA 1/8W	1
R320	401 031 7202	CARBON 47K JA 1/8W	1
R321	401 028 3200	CARBON 1K JA 1/8W	1
R322	401 028 3200	CARBON 1K JA 1/8W	1
R323	401 029 9706	CARBON 220 JA 1/8W	1
R326	401 029 0901	CARBON 1.5K JA 1/8W	1
R327	401 028 3705	CARBON 10K JA 1/8W	1
R328	401 030 9207	CARBON 3.3K JA 1/8W	1
R329	401 030 4202	CARBON 2.7K JA 1/8W	1
R330	401 028 3705	CARBON 10K JA 1/8W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R331	401 031 2801	CARBON 39K JA 1/8W	1
R332	401 028 3200	CARBON 1K JA 1/8W	1
R333	401 028 2609	CARBON 100 JA 1/8W	1
R334	401 031 7202	CARBON 47K JA 1/8W	1
R335	401 030 0204	CARBON 2.2K JA 1/8W	1
R336	401 031 0203	CARBON 330K JA 1/8W	1
R337	401 028 2104	CARBON 10 JA 1/8W	1
R338	401 022 0809	CARBON 68 JA 1/4W	1
R339	401 029 5500	CARBON 18K JA 1/8W	1
R340	401 028 3705	CARBON 10K JA 1/8W	1
R341	401 031 8308	CARBON 5.6 JA 1/8W	1
R342	401 030 0709	CARBON 22K JA 1/8W	1

RADIO TUNER P.C.B. ASSY

Ref. No.	Part No.	Description				Q'ty
85	141-0-1939-17621	Radio Tuner P.C.B. Assy				1
CN1	4-2369-73370	Connector 4P				1
SW1	4-2319-78230	Switch Slide (BAND)				1
BPF1	4-2539-71021	Band Pass Filter				1
L1	4-2599-70810	RF Coil				1
L2	4-2589-71960	FM OSC Trans				1
L3	4-2579-71687	Bar Antenna				1
T1	4-2569-71631	IFT FM				1
T2	4-2569-71340	IFT FM				1
T3	4-2569-71353	IFT AM				1
T4	4-2589-70515	OSC Trans				1
CF1	4-2539-70881	Ceramic Filter				1
CF2	4-2539-70685	Mechanical Filter				1
PVC1	4-2249-70781	Variable Condenser				1
P1	4-2229-73060	Potentiometer				1
IC1	4-2069-74790	IC, BA 4412				1
IC2	4-2069-72964	IC, BA4236 L				1
IC3	4-2069-73910	IC, BA 1355				1
C1	CC5-6-A500-KD01R	Ceramic	5.6pF	50V	±10%	1
C2	CC1-5-0500-JD01R	Ceramic	15pF	50V	±5%	1
C3	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C4	CC1-0-2500-KE01R	Ceramic	0.001μF	50V	±10%	1
C5	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C6	CC1-5-0500-JD01R	Ceramic	15pF	50V	±5%	1
C7	CC5-6-A500-KD01R	Ceramic	5.6pF	50V	±10%	1
C8	CC2-2-0500-JD01R	Ceramic	22pF	50V	±5%	1
C9	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C10	CI2-2-3160-NG00R	Boundary	0.022μF	16V	±30%	1
C11	CI2-2-3160-NG00R	Boundary	0.022μF	16V	±30%	1
C12	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C13	CI2-2-3160-NG00R	Boundary	0.022μF	16V	±30%	1
C14	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C15	CI4-7-3250-KF00C	Boundary	0.047μF	25V	±10%	1
C16	CC6-8-A500-KD01R	Ceramic	6.8pF	50V	±10%	1
C17	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C18	CC1-0-1500-KE01R	Ceramic	100pF	50V	±10%	1
C19	CP4-7-1101-J002V	Polypropylen	470pF	100V	±5%	1
C20	CD2-2-4500-0001V	Electrolytic	0.22μF	50V		1
C21	CD4-7-4500-0001V	Electrolytic	0.47μF	50V		1
C22	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C23	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C24	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C25	CD1-0-4500-0001V	Electrolytic	0.1μF	50V		1
C26	CD1-0-4500-0001V	Electrolytic	0.1μF	50V		1
C27	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C28	CI1-0-3160-NG01R	Boundary	0.01μF	16V	±30%	1
C29	CD1-0-7100-0001V	Electrolytic	100μF	10V		1
C30	CI2-2-3160-NG00R	Boundary	0.022μF	16V	±30%	1
C31	CI2-2-3160-NG00R	Boundary	0.022μF	16V	±30%	1
C32	CD4-7-7100-0001V	Electrolytic	470μF	10V		1
R1	401 028 2104	CARBON 10 JA 1/8W				1
R2	401 031 0203	CARBON 330K JA 1/8W				1
R3	401 018 5801	CARBON 330K JA 1/4W				1
R5	401 030 9207	CARBON 3.3K JA 1/8W				1
R6	401 031 0203	CARBON 330K JA 1/8W				1
R7	401 030 0709	CARBON 22K JA 1/8W				1
R8	401 028 3200	CARBON 1K JA 1/8W				1
R9	401 028 3705	CARBON 10K JA 1/8W				1
R10	401 032 0103	CARBON 560 JA 1/8W				1
R11	401 030 9207	CARBON 3.3K JA 1/8W				1
R12	401 030 9207	CARBON 3.3K JA 1/8W				1
R13	401 029 1502	CARBON 15K JA 1/8W				1
R14	401 029 1502	CARBON 15K JA 1/8W				1
R15	401 028 3705	CARBON 10K JA 1/8W				1
R16	401 028 3705	CARBON 10K JA 1/8W				1
R17	401 028 2609	CARBON 100 JA 1/8W				1
R18	401 031 5505	CARBON 47 JA 1/8W				1
R19	401 028 3200	CARBON 1K JA 1/8W				1
R20	401 030 3304	CARBON 27 JA 1/8W				1

SWITCH P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
86	141-0-1939-17631	Switch P.C.B. Assy	1
SW2	4-2319-78400	Lever Switch (MODE)	1

LED P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
87	141-0-1939-17641	LED P.C.B. Assy	1
D11	D00- - -SLP- -173B-	LED, SLP 173 B 01 (FM STEREO)	1

CD MAIN P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
88	141-0-1939-17831	CD Main P.C.B. Assy	1
PL1	4-2369-76320	Plug 8P	1
PL2	4-2369-76330	Plug 10P	1
CN400	4-2359-79770	Socket FPC 20P	1
CN401	4-2369-74990	Plug 8P	1
CN402	4-2369-74920	Plug 6P	1
CN403	4-2369-74890	Plug 2P	1
CN404	4-2369-75100	Plug 4P	1
CN405	4-2369-75100	Plug 4P	1
S401	4-2319-75712	Push Switch (AUTO SPACE)	1
S402	4-2319-75713	Push Switch (AUTO REPEAT)	1
L403	4-2539-72160	RF Filter	1
L404	4-2532-00370	Choke Coil (100μH)	1
L405	4-2532-00150	Choke Coil (10μH)	1
L406	4-2589-73310	OSC Coil	1
P401	4-2229-76560	Potentiometer (B-100kΩ)	1
P402	4-2229-76560	Potentiometer (B-100kΩ)	1
P403	4-2229-76562	Potentiometer (B-20kΩ)	1
P404	4-2229-76561	Potentiometer (B-10kΩ)	1
P405	4-2229-76563	Potentiometer (B-200kΩ)	1
P406	4-2229-76561	Potentiometer (B-10kΩ)	1
X401	4-2259-70772	Crystal	1
D500	202-5-1250-21110	Diode, SVC 211	1
D501	4-2029-75300	Diode, 1SS254	1
D502	4-2029-75300	Diode, 1SS254	1
D503	4-2029-75300	Diode, 1SS254	1
D504	4-2029-75300	Diode, 1SS254	1
D505	4-2029-75300	Diode, 1SS254	1
D506	4-2029-75300	Diode, 1SS254	1
D508	4-2029-75300	Diode, 1SS254	1
D509	4-2029-75300	Diode, 1SS254	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
D510	4-2029-75300	Diode, 1SS254				1
D511	4-2029-75300	Diode, 1SS254				1
D512	4-2029-75300	Diode, 1SS254				1
D513	4-2029-75300	Diode, 1SS254				1
D514	4-2029-75300	Diode, 1SS254				1
D516	4-2029-75300	Diode, 1SS254				1
D521	4-2029-75300	Diode, 1SS254				1
D522	4-2029-75300	Diode, 1SS254				1
D523	4-2029-75300	Diode, 1SS254				1
D524	4-2029-75300	Diode, 1SS254				1
D525	4-2029-75300	Diode, 1SS254				1
D526	4-2029-75300	Diode, 1SS254				1
IC401	4-2069-75090	IC, CX 20109				1
IC402	4-2069-75100	IC, YM 3805				1
IC403	4-2069-75121	IC, TC 5517CF-20				1
IC404	4-2069-75110	IC, YM 3015				1
IC405	4-2069-75180	IC, TA 7256 P				1
IC406	4-2069-75180	IC, TA 7256 P				1
IC407	4-2069-75170	IC, NJM 2903 S				1
IC408	4-2069-75590	IC, NJM 2068 S-D				1
IC409	4-2069-75590	IC, NJM 2068 S-D				1
IC410	206-5-1696-45810	IC, LA 6458 S				1
IC411	217-5-1926-523301	IC, LC6523H-3016				1
Q501	203-5-5210-53660	Transistor, 2SC 536				1
Q502	203-5-4921-01274	Transistor, 2SD 1012				1
Q503	203-5-5210-53660	Transistor, 2SC 536				1
Q504	203-5-5210-53660	Transistor, 2SC 536				1
Q505	203-5-4921-01274	Transistor, 2SD 1012				1
Q506	203-5-5210-53660	Transistor, 2SC 536				1
Q507	203-5-5210-53660	Transistor, 2SC 536				1
Q508	203-5-4921-01274	Transistor, 2SD 1012				1
Q509	203-5-4830-60860	Transistor, 2SA 608				1
Q510	203-5-6870-54570	Transistor, 2SD 545				1
Q511	203-5-5210-53660	Transistor, 2SC 536				1
Q512	203-5-4830-60860	Transistor, 2SA 608				1
Q513	203-5-4830-60860	Transistor, 2SA 608				1
Q514	203-5-5210-53660	Transistor, 2SC 536				1
Q515	4-2039-72430	Transistor, DTC 114E				1
Q516	4-2039-72010	Degitra, DTC 124S				1
C401	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C402	CD4-7-663A-0001V	Electrolytic	47µF	6.3V		1
C403	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C404	CD4-7-663A-0001V	Electrolytic	47µF	6.3V		1
C405	CD4-7-663A-0001V	Electrolytic	47µF	6.3V		1
C406	CD4-7-663A-0001V	Electrolytic	47µF	6.3V		1
C407	CM1-0-3500-J00BV	Mylar	0.01µF	50V	±5%	1
C408	CD1-0-5500-0001V	Electrolytic	1µF	50V		1
C409	CC2-2-0500-JD01R	Ceramic	22pF	50V	±5%	1
C410	CC2-2-0500-JD01R	Ceramic	22pF	50V	±5%	1
C411	CD4-7-4500-0001V	Electrolytic	0.47µF	50V		1
C412	CM3-3-3500-J00TV	Mylar	0.033µF	50V	±5%	1
C413	CC6-8-0500-JD01R	Ceramic	68pF	50V	±5%	1
C414	CC6-8-0500-JD01R	Ceramic	68pF	50V	±5%	1
C415	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C416	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C417	CM3-3-2500-J00BV	Mylar	0.0033µF	50V	±5%	1
C418	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C419	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C420	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C421	CM1-0-3500-J00BV	Mylar	0.01µF	50V	±5%	1
C422	CM4-7-3500-J00TV	Mylar	0.047µF	50V	±5%	1
C423	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C424	CM2-7-2500-J00BV	Mylar	0.0027µF	50V	±5%	1
C425	CM3-9-3500-J00TV	Mylar	0.039µF	50V	±5%	1

Ref. No.	Part No.	Description				Q'ty
C426	CC5-6-0500-JD01R	Ceramic	56pF	50V	±5%	1
C427	CB1-0-5500-0000V	None-polar	1µF	50V		1
C428	CM4-7-3500-J00TV	Mylar	0.047µF	50V	±5%	1
C429	CC2-2-0500-JD01R	Ceramic	22pF	50V	±5%	1
C430	CM1-0-4500-J00TV	Mylar	0.1µF	50V	±5%	1
C431	CM1-0-4500-J00TV	Mylar	0.1µF	50V	±5%	1
C432	CD2-2-5500-0001V	Electrolytic	2.2µF	50V		1
C433	CB4-7-5250-0000V	None-polar	4.7µF	25V		1
C434	CD2-2-5500-0001V	Electrolytic	2.2µF	50V		1
C435	CD2-2-763A-0006V	Electrolytic	220µF	6.3V		1
C436	CM1-0-3500-J00BV	Mylar	0.01µF	50V	±5%	1
C437	CM6-8-2500-J00BV	Mylar	0.0068µF	50V	±5%	1
C438	CM3-3-2500-J00BV	Mylar	0.0033µF	50V	±5%	1
C439	CM3-3-2500-J00BV	Mylar	0.0033µF	50V	±5%	1
C440	CM6-8-2500-J00BV	Mylar	0.0068µF	50V	±5%	1
C441	CB1-0-5500-0000V	None-polar	1µF	50V		1
C442	CD4-7-6100-0001V	Electrolytic	47µF	10V		1
C443	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C444	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C445	CM1-2-4500-J00TV	Mylar	0.12µF	50V	±5%	1
C446	CM1-2-4500-J00TV	Mylar	0.12µF	50V	±5%	1
C447	CD4-7-5500-0001V	Electrolytic	4.7µF	50V		1
C448	CM1-2-4500-J00TV	Mylar	0.12µF	50V	±5%	1
C449	CD4-7-5500-0001V	Electrolytic	4.7µF	50V		1
C450	CD1-0-4500-0001V	Electrolytic	0.1µF	50V		1
C451	CD1-0-763A-0006V	Electrolytic	100µF	6.3V		1
C452	CI2-2-3250-KF00C	Boundary	0.022µF	25V	±10%	1
C453	CD1-0-763A-0006V	Electrolytic	100µF	6.3V		1
C454	CI1-0-4250-KF00C	Boundary	0.1µF	25V	±10%	1
C455	CC3-9-1500-KE01R	Ceramic	390pF	50V	±10%	1
C456	CC3-9-1500-KE01R	Ceramic	390pF	50V	±10%	1
C457	CD4-7-663A-0001V	Electrolytic	47µF	6.3V		1
C458	CM2-7-2500-J00BV	Mylar	0.0027µF	50V	±5%	1
C459	CM2-7-2500-J00BV	Mylar	0.0027µF	50V	±5%	1
C460	CC1-0-0500-JD01R	Ceramic	10pF	50V	±5%	1
C461	CC1-0-0500-JD01R	Ceramic	10pF	50V	±5%	1
C481	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C482	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C483	CC2-7-0500-JD01R	Ceramic	27pF	50V	±5%	1
C484	CC2-7-0500-JD01R	Ceramic	27pF	50V	±5%	1
C485	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C487	CM4-7-3500-J00TV	Mylar	0.047µF	50V	±5%	1
C488	CC5-6-A500-KD01R	Ceramic	5.6pF	50V	±10%	1
C489	CC5-6-A500-KD01R	Ceramic	5.6pF	50V	±10%	1
C490	CC4-7-1500-KE01R	Ceramic	470pF	50V	±10%	1
C491	CD2-2-5500-0001V	Electrolytic	2.2µF	50V		1
C495	CM1-0-4500-J00TV	Mylar	0.1µF	50V	±5%	1
C500	CI1-0-3160-NG01R	Boundary	0.01µF	16V	±30%	1
C501	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
C502	CC1-0-2500-KE01R	Ceramic	0.001µF	50V	±10%	1
R400	4-2219-71630	Resistor (10kΩ x 14)				1
R401	401 028 3200	CARBON 1K JA 1/8W				1
R402	401 030 0204	CARBON 2.2K JA 1/8W				1
R403	401 028 4207	CARBON 100K JA 1/8W				1
R404	401 030 0204	CARBON 2.2K JA 1/8W				1
R405	401 031 6601	CARBON 4.7K JA 1/8W				1
R406	401 032 4002	CARBON 680 JA 1/8W				1
R407	401 030 0709	CARBON 22K JA 1/8W				1
R408	401 029 6002	CARBON 180K JA 1/8W				1
R409	401 028 9608	CARBON 130K JA 1/8W				1
R410	401 031 3204	CARBON 390K JA 1/8W				1
R411	401 029 2004	CARBON 150K JA 1/8W				1
R412	401 028 8106	CARBON 120K JA 1/8W				1
R413	401 030 0204	CARBON 2.2K JA 1/8W				1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R414	401 028 3705	CARBON 10K JA 1/8W	1
R415	401 030 0204	CARBON 2.2K JA 1/8W	1
R416	401 028 4207	CARBON 100K JA 1/8W	1
R417	401 028 3705	CARBON 10K JA 1/8W	1
R418	401 053 1301	MT-FILM 22K FA 1/6W	1
R419	401 053 1301	MT-FILM 22K FA 1/6W	1
R420	401 030 0204	CARBON 2.2K JA 1/8W	1
R421	401 053 1301	MT-FILM 22K FA 1/6W	1
R422	401 053 1301	MT-FILM 22K FA 1/6W	1
R423	401 030 9207	CARBON 3.3K JA 1/8W	1
R424	401 028 4207	CARBON 100K JA 1/8W	1
R425	401 031 6601	CARBON 4.7K JA 1/8W	1
R426	401 029 9706	CARBON 220 JA 1/8W	1
R427	401 030 0709	CARBON 22K JA 1/8W	1
R428	401 028 3200	CARBON 1K JA 1/8W	1
R429	401 028 4702	CARBON 1M JA 1/8W	1
R430	401 016 3809	CARBON 2.2K JA 1/4W	1
R431	401 031 0203	CARBON 330K JA 1/8W	1
R432	401 030 1300	CARBON 220K JA 1/8W	1
R433	401 030 0709	CARBON 22K JA 1/8W	1
R434	401 030 0709	CARBON 22K JA 1/8W	1
R435	401 028 3705	CARBON 10K JA 1/8W	1
R436	401 031 7707	CARBON 470K JA 1/8W	1
R437	401 030 4707	CARBON 27K JA 1/8W	1
R438	401 031 0203	CARBON 330K JA 1/8W	1
R439	401 031 7202	CARBON 47K JA 1/8W	1
R440	401 031 7202	CARBON 47K JA 1/8W	1
R441	401 030 0709	CARBON 22K JA 1/8W	1
R442	401 031 7202	CARBON 47K JA 1/8W	1
R443	401 031 7202	CARBON 47K JA 1/8W	1
R444	401 030 0709	CARBON 22K JA 1/8W	1
R445	401 014 5201	CARBON 15K JA 1/4W	1
R446	401 030 0204	CARBON 2.2K JA 1/8W	1
R447	401 030 0709	CARBON 22K JA 1/8W	1
R448	401 031 7202	CARBON 47K JA 1/8W	1
R450	401 029 9102	CARBON 22 JA 1/8W	1
R451	401 019 6500	CARBON 4.7 JA 1/4W	1
R452	401 030 5209	CARBON 270K JA 1/8W	1
R453	401 030 4707	CARBON 27K JA 1/8W	1
R454	401 029 9102	CARBON 22 JA 1/8W	1
R455	401 021 7403	CARBON 6.8 JA 1/4W	1
R456	401 029 2004	CARBON 150K JA 1/8W	1
R457	401 030 0709	CARBON 22K JA 1/8W	1
R458	401 030 0709	CARBON 22K JA 1/8W	1
R459	401 031 6106	CARBON 470 JA 1/8W	1
R460	401 031 7202	CARBON 47K JA 1/8W	1
R461	401 028 3705	CARBON 10K JA 1/8W	1
R462	401 031 7202	CARBON 47K JA 1/8W	1
R463	401 031 7202	CARBON 47K JA 1/8W	1
R467	401 028 7604	CARBON 12K JA 1/8W	1
R468	401 028 3705	CARBON 10K JA 1/8W	1
R469	401 032 8703	CARBON 8.2K JA 1/8W	1
R470	401 030 0204	CARBON 2.2K JA 1/8W	1
R471	401 028 3705	CARBON 10K JA 1/8W	1
R472	401 015 6900	CARBON 2.2 JA 1/4W	1
R473	401 030 1300	CARBON 220K JA 1/8W	1
R474	401 028 3705	CARBON 10K JA 1/8W	1
R475	401 030 1300	CARBON 220K JA 1/8W	1
R476	401 030 1300	CARBON 220K JA 1/8W	1
R477	401 031 3204	CARBON 390K JA 1/8W	1
R478	401 032 5108	CARBON 68K JA 1/8W	1
R479	401 032 5603	CARBON 680K JA 1/8W	1
R480	401 029 6002	CARBON 180K JA 1/8W	1
R481	401 030 9207	CARBON 3.3K JA 1/8W	1

Ref. No.	Part No.	Description	Q'ty
R482	401 028 4207	CARBON 100K JA 1/8W	1
R483	401 031 7202	CARBON 47K JA 1/8W	1
R484	401 029 5005	CARBON 1.8K JA 1/8W	1
R485	401 031 7202	CARBON 47K JA 1/8W	1
R486	401 031 7202	CARBON 47K JA 1/8W	1
R487	401 028 3705	CARBON 10K JA 1/8W	1
R488	401 030 0204	CARBON 2.2K JA 1/8W	1
R489	401 015 6900	CARBON 2.2 JA 1/4W	1
R490	401 015 6504	CARBON 2.2 JA 1/4W	1
R491	401 030 9702	CARBON 33K JA 1/8W	1
R492	401 030 9207	CARBON 3.3K JA 1/8W	1
R493	401 031 7202	CARBON 47K JA 1/8W	1
R494	401 032 1506	CARBON 560K JA 1/8W	1
R495	401 014 6109	CARBON 150K JA 1/4W	1
R496	401 030 1300	CARBON 220K JA 1/8W	1
R497	401 028 3705	CARBON 10K JA 1/8W	1
R498	401 028 3705	CARBON 10K JA 1/8W	1
R499	401 031 7707	CARBON 470K JA 1/8W	1
R500	401 028 3705	CARBON 10K JA 1/8W	1
R501	401 028 4207	CARBON 100K JA 1/8W	1
R502	401 030 4707	CARBON 27K JA 1/8W	1
R503	401 031 7202	CARBON 47K JA 1/8W	1
R504	401 031 7202	CARBON 47K JA 1/8W	1
R505	401 032 8703	CARBON 8.2K JA 1/8W	1
R506	401 029 6002	CARBON 180K JA 1/8W	1
R507	401 031 6601	CARBON 4.7K JA 1/8W	1
R508	401 030 0709	CARBON 22K JA 1/8W	1
R509	401 030 9702	CARBON 33K JA 1/8W	1
R510	401 032 5108	CARBON 68K JA 1/8W	1
R511	401 032 1100	CARBON 56K JA 1/8W	1
R512	401 032 1100	CARBON 56K JA 1/8W	1
R513	401 028 3705	CARBON 10K JA 1/8W	1
R514	401 028 3705	CARBON 10K JA 1/8W	1
R515	401 031 7202	CARBON 47K JA 1/8W	1
R518	401 030 8200	CARBON 33 JA 1/8W	1
R519	401 032 5108	CARBON 68K JA 1/8W	1
R520	401 032 5108	CARBON 68K JA 1/8W	1
R521	401 031 6106	CARBON 470 JA 1/8W	1
R522	401 031 6106	CARBON 470 JA 1/8W	1
R537	401 028 4207	CARBON 100K JA 1/8W	1
R538	401 028 4207	CARBON 100K JA 1/8W	1
R539	401 031 0203	CARBON 330K JA 1/8W	1
R540	401 031 0203	CARBON 330K JA 1/8W	1
R541	401 028 7604	CARBON 12K JA 1/8W	1
R542	401 032 5108	CARBON 68K JA 1/8W	1
R544	401 028 3705	CARBON 10K JA 1/8W	1
R555	401 028 3705	CARBON 10K JA 1/8W	1
R556	401 030 9702	CARBON 33K JA 1/8W	1
R557	401 032 1506	CARBON 560K JA 1/8W	1
R558	401 014 6109	CARBON 150K JA 1/4W	1
R559	401 032 9205	CARBON 82K JA 1/8W	1
R560	401 028 3705	CARBON 10K JA 1/8W	1
R561	401 028 3705	CARBON 10K JA 1/8W	1
R562	401 031 7202	CARBON 47K JA 1/8W	1
R563	401 028 4207	CARBON 100K JA 1/8W	1
R564	401 032 1100	CARBON 56K JA 1/8W	1
R565	401 028 4702	CARBON 1M JA 1/8W	1
R566	401 029 0901	CARBON 1.5K JA 1/8W	1
R567	401 029 1502	CARBON 15K JA 1/8W	1
R580	401 028 2104	CARBON 10 JA 1/8W	1

CD SUB 1 P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
89	141-0-1939-17840	CD Sub 1 P.C.B. Assy	1
CN103	4-2359-79931	Connector 4P Assy	1

P.C.BOARD PARTS LIST(Continued)

Ref. No.	Part No.	Description				Q'ty
D515	4-2029-75300	Diode,1ss254				1
D517	4-2029-75421	Zener Diode, MTZ J 8.2A				1
D518	4-2029-75331	Zener Diode, MTZ J 5.6C				1
D519	4-2029-75331	Zener Diode, MTZ J 5.6C				1
D520	4-2029-75331	Zener Diode, MTZ J 5.6C				1
D527	4-2029-75300	Diode, 1SS254				1
D528	4-2029-75300	Diode, 1SS254				1
Q517	203-5-5210-53660	Transistor, 2SC 536				1
Q518	203-5-4921-01274	Transistor, 2SD 1012				1
Q519	203-5-4921-01274	Transistor, 2SD 1012				1
Q520	203-5-4921-01274	Transistor, 2SD 1012				1
Q521	203-5-4921-01274	Transistor, 2SD 1012				1
Q522	203-5-4830-60860	Transistor, 2SA 608				1
Q523	203-5-4921-01274	Transistor, 2SD 1012				1
Q524	203-5-4921-01274	Transistor, 2SD 1012				1
Q525	203-5-4921-01274	Transistor, 2SD 1012				1
Q526	203-5-4930-80860	Transistor, 2SB 808				1
Q527	203-5-5210-53660	Transistor, 2SC 536				1
C462	CM8-2-3500-J00TV	Mylar	0.082µF	50V	±5%	1
C463	CM8-2-3500-J00TV	Mylar	0.082µF	50V	±5%	1
C464	CD4-7-5250-0001V	Electrolytic	4.7µF	25V		1
C465	CD4-7-5250-0001V	Electrolytic	4.7µF	25V		1
C466	CM8-2-2500-J00BV	Mylar	0.0082µF	50V	±5%	1
C467	CM8-2-2500-J00BV	Mylar	0.0082µF	50V	±5%	1
C470	CD1-0-6160-0001V	Electrolytic	10µF	16V		1
C471	CD4-7-663A-0001V	Electrolytic	47µF	6.3V		1
C472	CD2-2-763A-0006V	Electrolytic	220µF	6.3V		1
C473	CD3-3-763A-0006V	Electrolytic	330µF	6.3V		1
C474	CD2-2-763A-0006V	Electrolytic	220µF	6.3V		1
C475	CD2-2-763A-0006V	Electrolytic	220µF	6.3V		1
C476	CD3-3-763A-0006V	Electrolytic	330µF	6.3V		1
C477	CD1-0-763A-0006V	Electrolytic	100µF	6.3V		1
C478	CD1-0-763A-0006V	Electrolytic	100µF	6.3V		1
C479	CD4-7-763A-0006V	Electrolytic	470µF	6.3V		1
C480	CD4-7-763A-0006V	Electrolytic	470µF	6.3V		1
C486	CD1-0-763A-0006V	Electrolytic	100µF	6.3V		1
C491	CD1-0-763A-0006V	Electrolytic	100µF	6.3V		1
R516	401 032 8703	CARBON 8.2K JA 1/8W				1
R517	401 030 9702	CARBON 33K JA 1/8W				1
R523	401 030 1300	CARBON 220K JA 1/8W				1
R524	401 030 1300	CARBON 220K JA 1/8W				1
R525	401 029 4503	CARBON 180 JA 1/8W				1
R526	401 029 4503	CARBON 180 JA 1/8W				1
R527	401 032 8703	CARBON 8.2K JA 1/8W				1
R528	401 032 8703	CARBON 8.2K JA 1/8W				1
R529	401 031 6106	CARBON 470 JA 1/8W				1
R530	401 031 6106	CARBON 470 JA 1/8W				1
R531	401 031 6601	CARBON 4.7K JA 1/8W				1
R532	401 031 6601	CARBON 4.7K JA 1/8W				1
R543	401 028 3705	CARBON 10K JA 1/8W				1
R545	401 028 4207	CARBON 100K JA 1/8W				1
R546	401 028 3705	CARBON 10K JA 1/8W				1
R547	401 028 4207	CARBON 100K JA 1/8W				1
R548	401 028 8106	CARBON 120K JA 1/8W				1
R549	401 029 9706	CARBON 220 JA 1/8W				1
R550	401 031 6601	CARBON 4.7K JA 1/8W				1
R551	401 031 6601	CARBON 4.7K JA 1/8W				1
R552	401 031 5505	CARBON 47 JA 1/8W				1
R553	401 032 7805	CARBON 82 JA 1/8W				1
R554	401 029 4503	CARBON 180 JA 1/8W				1
R568	401 030 9702	CARBON 33K JA 1/8W				1
R569	401 030 0709	CARBON 22K JA 1/8W				1

CD SUB 2 P.C.B. ASSY

Ref. No.	Part No.	Description				Q'ty
90	141-0-1939-17850	CD Sub 2 P.C.B. Assy				1
CN104	4-2359-79930	Connector 4P Assy				1
L401	4-2529-70391	AF Filter				1
L402	4-2529-70391	AF Filter				1
C468	CM4-7-2500-J00BV	Mylar	0.0047µF	50V	±5%	1
C469	CM4-7-2500-J00BV	Mylar	0.0047µF	50V	±5%	1
R533	401 028 3200	CARBON 1K JA 1/8W				1
R534	401 028 3200	CARBON 1K JA 1/8W				1
R535	401 032 8703	CARBON 8.2K JA 1/8W				1
R536	401 032 8703	CARBON 8.2K JA 1/8W				1

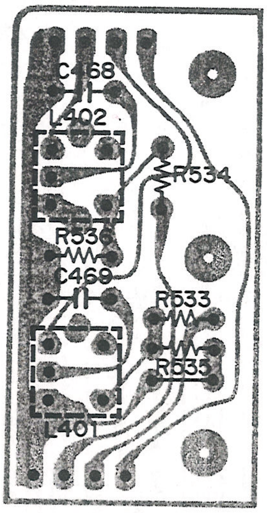
CONTROL P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
	141-0-1939-17680	Control P.C.B. Assy	1
	141-2-3689-14800	Holder LED CD	1
	401 035 4108	MT-GLAZE 0.000 ZA 1/8W	29
S403	4-2319-75560	Touch Switch (STOP)	1
S404	4-2319-75560	Touch Switch (INDEX FF)	1
S405	4-2319-75560	Touch Switch (INDEX FB)	1
S406	4-2319-75560	Touch Switch (FF)	1
S407	4-2319-75560	Touch Switch (FB)	1
S408	4-2319-75560	Touch Switch (PLAY)	1
S409	4-2319-75560	Touch Switch (PAUSE)	1
S410	4-2319-75560	Touch Switch (PROGRAM)	1
S411	4-2319-75560	Touch Switch (DISPLAY)	1
D400	4-2029-75430	LED, SL 1271 05 (DISPLAY)	1
D401	4-2029-75430	LED, SL 1271 05 (DISPLAY)	1
D402	4-2029-73910	LED, SLP-173B-50 (PROGRAM)	1
D403	4-2029-73910	LED, SLP-173B-50 (REPEAT)	1
D404	4-2029-75440	LED, SLP 273B 50 (PLAY/PAUSE)	1
D405	4-2029-73240	Diode, DAP 202 K	1
D406	4-2029-73240	Diode, DAP 202 K	1
D407	4-2029-73240	Diode, DAP 202 K	1
D408	4-2029-73240	Diode, DAP 202 K	1
D409	4-2029-73240	Diode, DAP 202 K	1
Q401	4-2039-72970	Transistor, DTA 143	1
Q402	4-2039-72970	Transistor, DTA 143	1
Q403	4-2039-72970	Transistor, DTA 143	1
Q404	4-2039-72970	Transistor, DTA 143	1
R570	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R571	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R572	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R573	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R574	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R575	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R576	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R577	401 036 1403	MT-GLAZE 220 JA 1/8W	1
R578	401 035 4603	MT-GLAZE 100 JA 1/8W	1

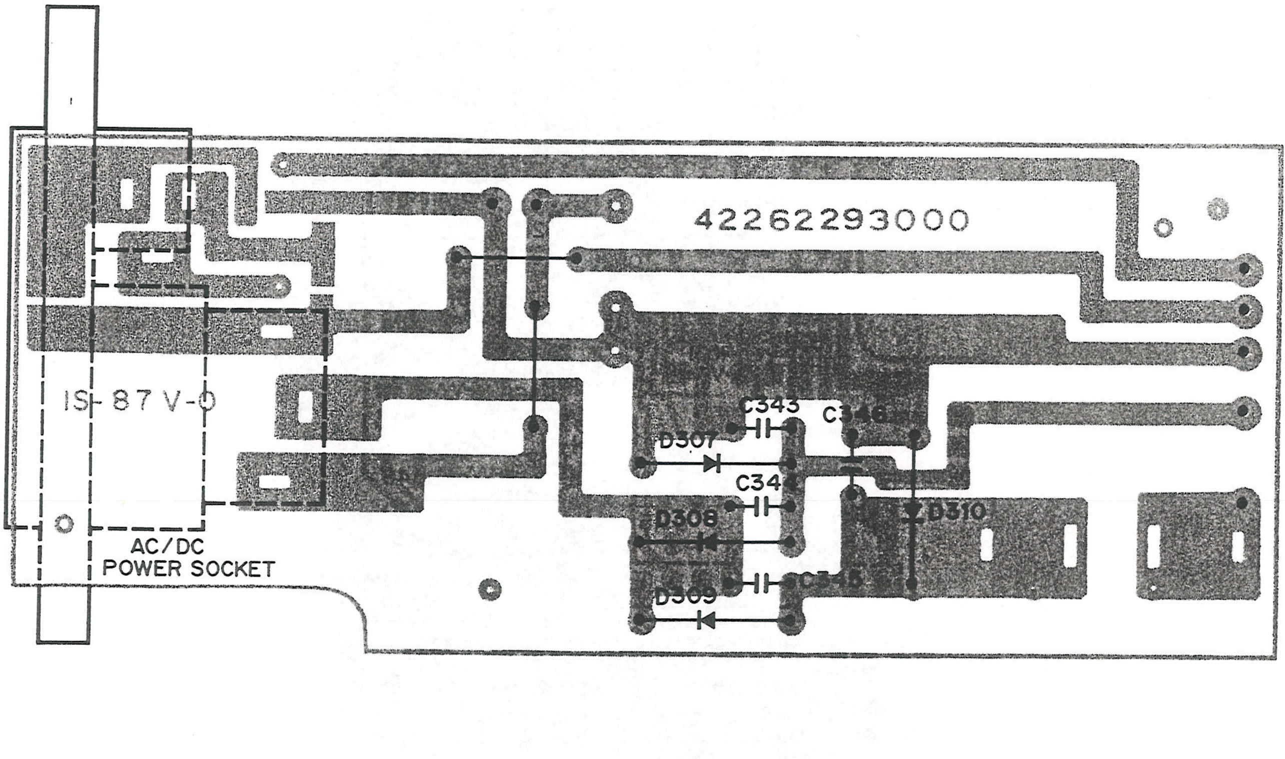
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CD SUB 2 P.C.BOARD
(BOTTOM VIEW)

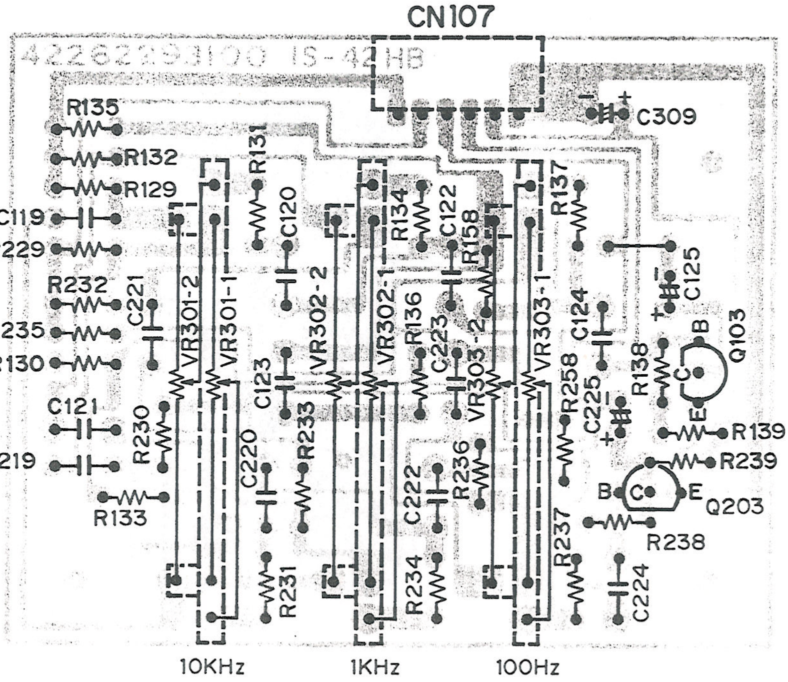

C468
L402
R534
R536
C469
R533
R535
L401

POWER SUPPLY P.C.BOARD
(BOTTOM VIEW)


42262293000
IS-87V-0
C343
C346
D307
C34
D308
D310
D309
C345
AC/DC
POWER SOCKET

EQ P.C.BOARD

(BOTTOM VIEW)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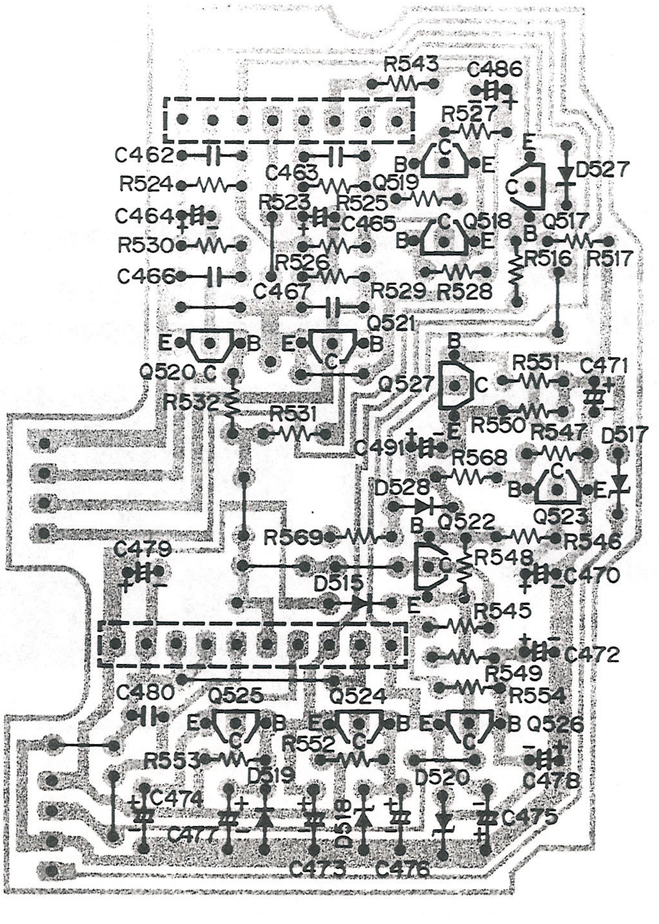
4226229S100 IS-42HB
C309
R135
R132
R129
C119
R229
R232
R235
R130
C121
C219
R133
R230
C221
VR301-2
VR301-1
R131
C120
C123
C220
R233
R231
VR302-2
VR302-1
R134
C122
R158
R136
C223
VR303-2
VR303-1
R222
R236
R234
R137
C124
C125
Q103
R138
R258
C225
R139
R239
Q203
R238
R237
C224
C222
B
C
E
10KHz
1KHz
100Hz

CD SUB 1 P.C.BOARD

(BOTTOM VIEW)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C486
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R516
R517
C466
C467
R529
R528
Q521
Q520
Q527
R532
R531
R551
C471
R550
R547
D517
C491
R568
D528
Q522
Q523
R569
R548
R546
C479
D515
C470
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C472
R549
C480
Q525
Q524
R554
Q526
R553
R552
D519
D520
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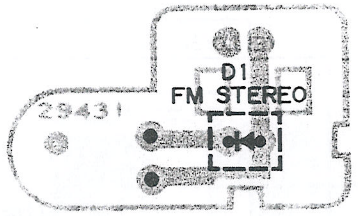
C477
D518
C475
C473
C476
E
B
C

LED P.C.BOARD

(BOTTOM VIEW)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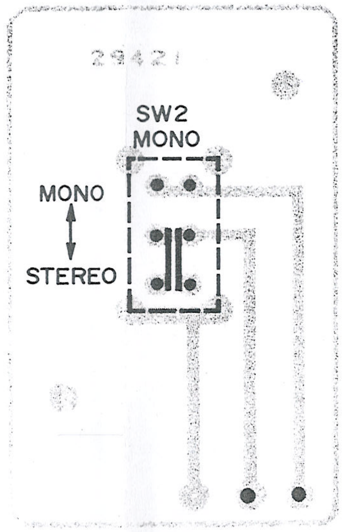
D1
FM STEREO

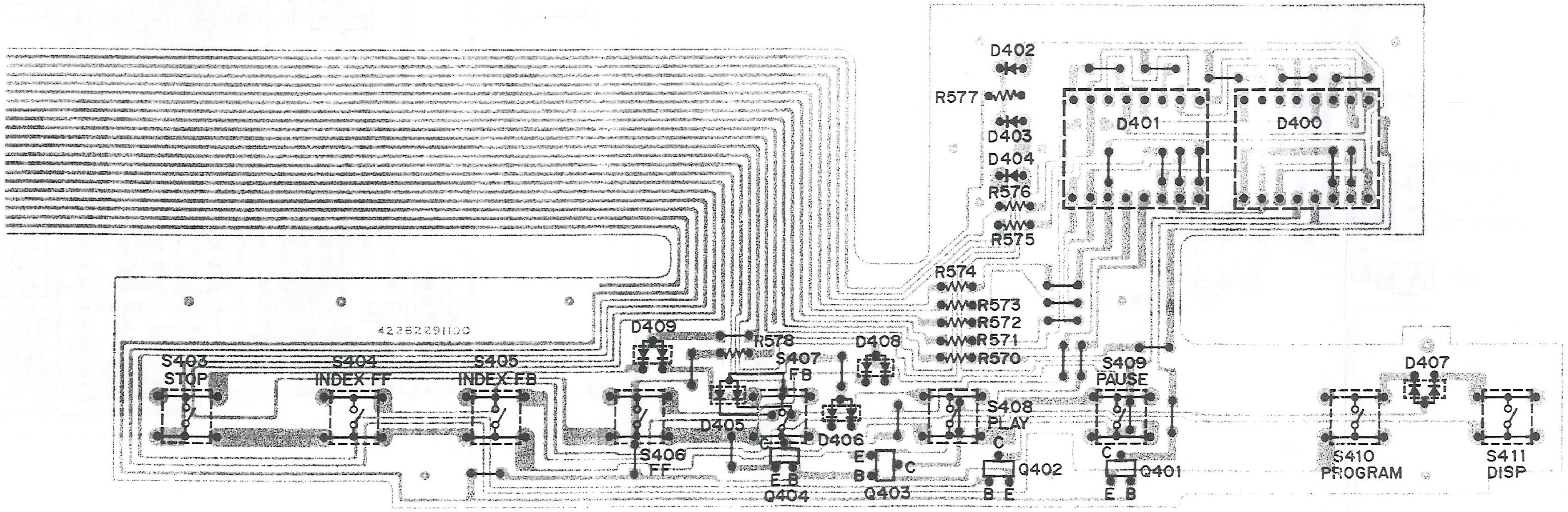
SWITCH P.C.BOARD

(BOTTOM VIEW)

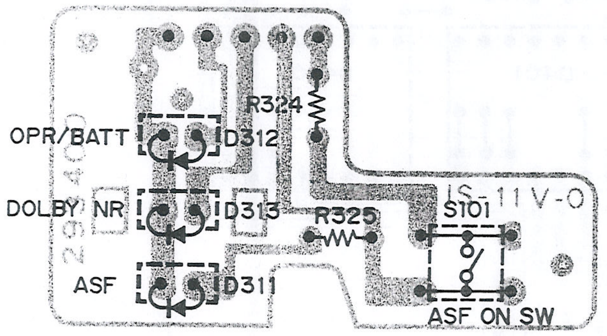

29421
SW2
MONO
MONO
STEREO

CONTROL P.C.BOARD

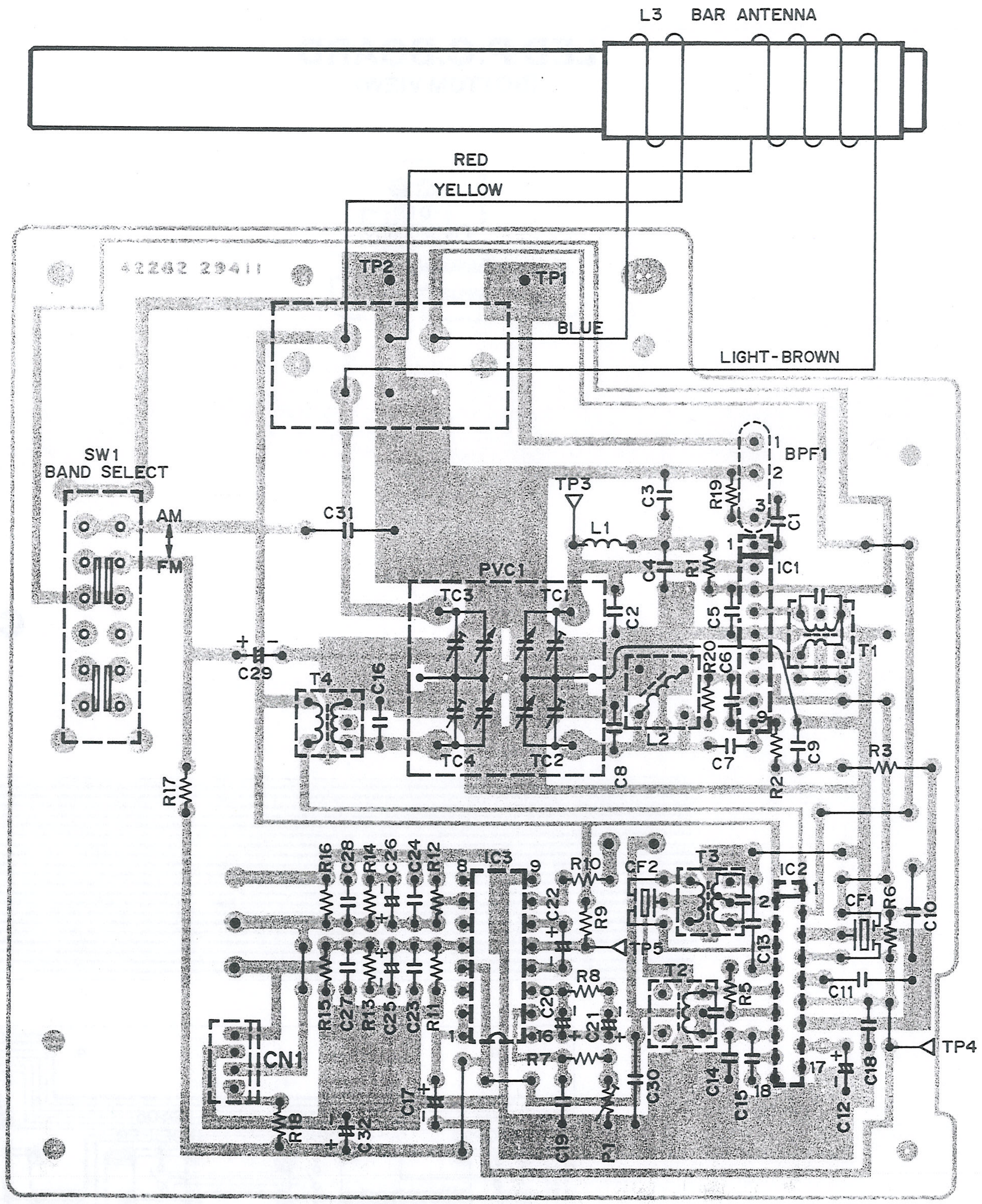
(BOTTOM VIEW)


D402
R577
D403
D404
R576
R575
D401
D400
R574
R573
R572
R571
R570
D409
R578
D408
S407
FB
S403
STOP
S404
INDEX FF
S405
INDEX FB
D405
D406
S406
FF
E B
Q404
E
B
C
Q403
S408
PLAY
C
Q402
B E
S409
PAUSE
C
Q401
E B
D407
S410
PROGRAM
S411
DISP

ASF LED P.C.BOARD
(BOTTOM VIEW)

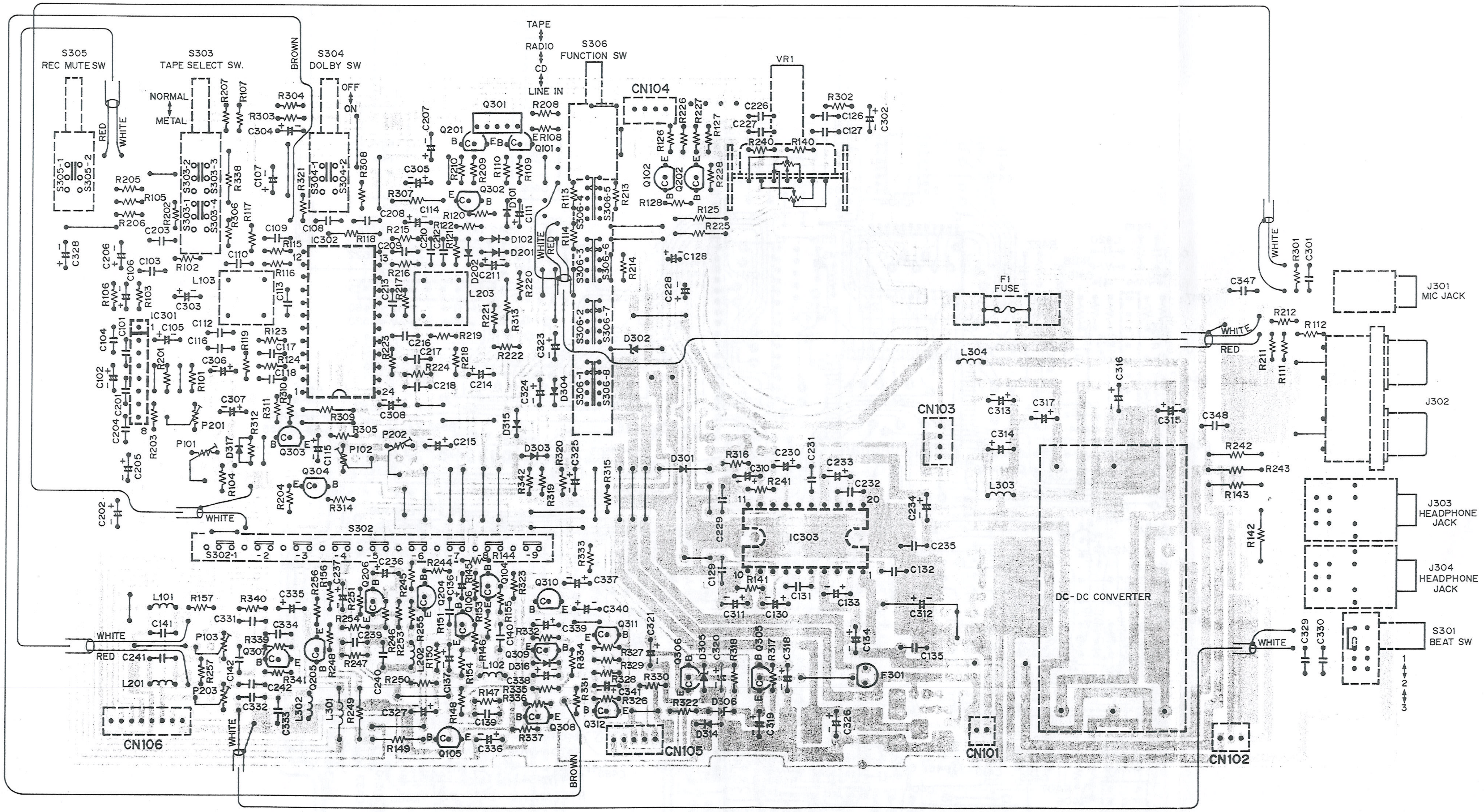

OPR/BATT
DOLBY NR
ASF
R324
D312
D313
D311
R325
S101
IS-11V-0
ASF ON SW
29400

RADIO TUNER P.C.BOARD
(BOTTOM VIEW)


L3 BAR ANTENNA
RED
YELLOW
BLUE
LIGHT-BROWN
42282 29411
TP1
TP2
TP3
TP4
TP5
SW1
BAND SELECT
AM
FM
C31
C29
T4
C16
PVC1
TC1
TC2
TC3
TC4
L1
L2
C2
C3
C4
C5
C6
C7
C8
C9
R1
R2
R3
R19
R20
BPF1
C1
IC1
T1
R17
IC2
IC3
R16
C28
R14
C26
C24
R12
R10
R9
C22
CF2
T3
CF1
R6
C10
C13
R15
C27
R13
C25
C23
R11
R8
C20
C21
T2
R5
C11
R7
C14
C15
C12
C18
C17
C19
C30
C32
R18
R4
CN1

AMPLIFIER P.C.BOARD

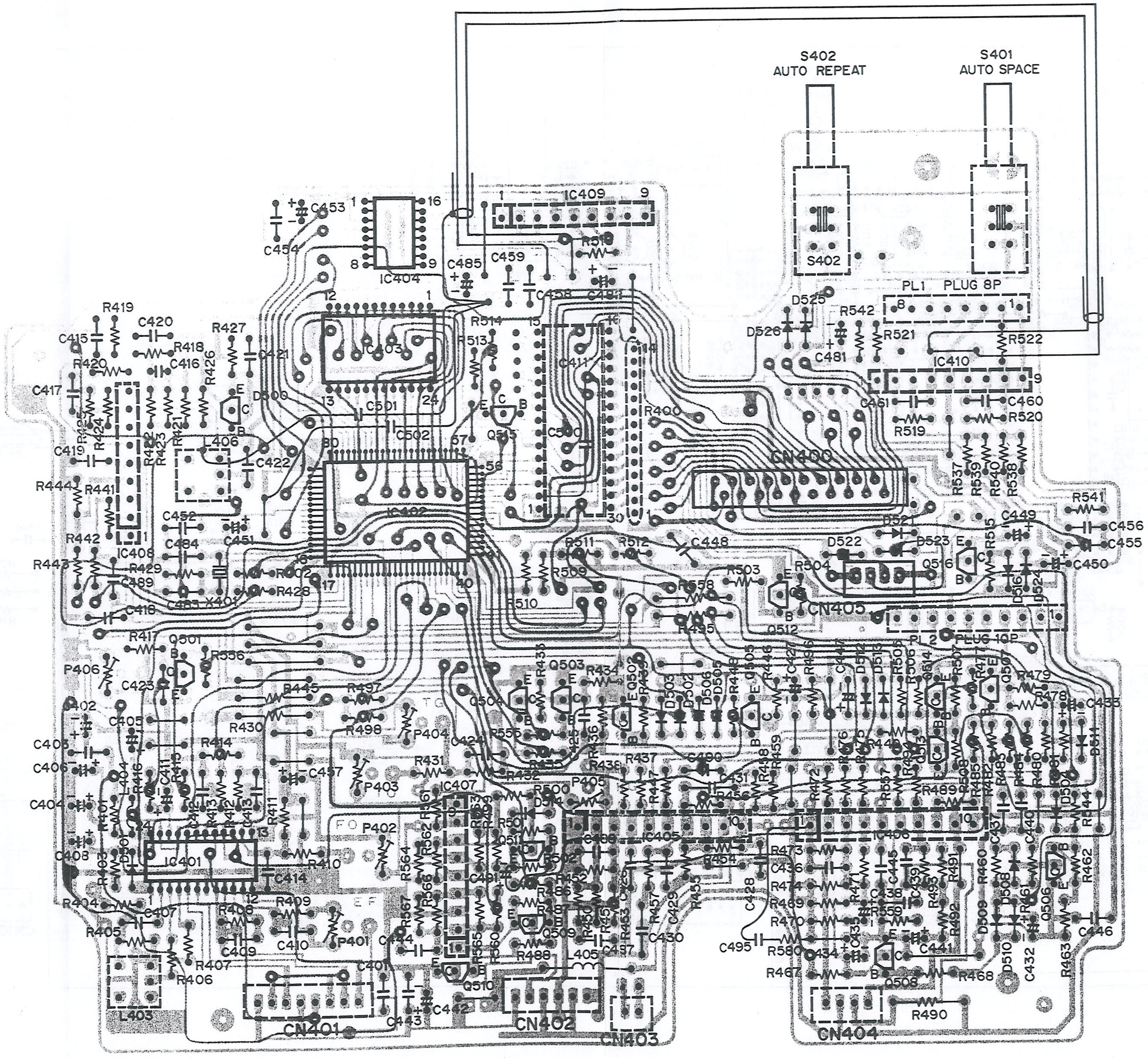
(BOTTOM VIEW)



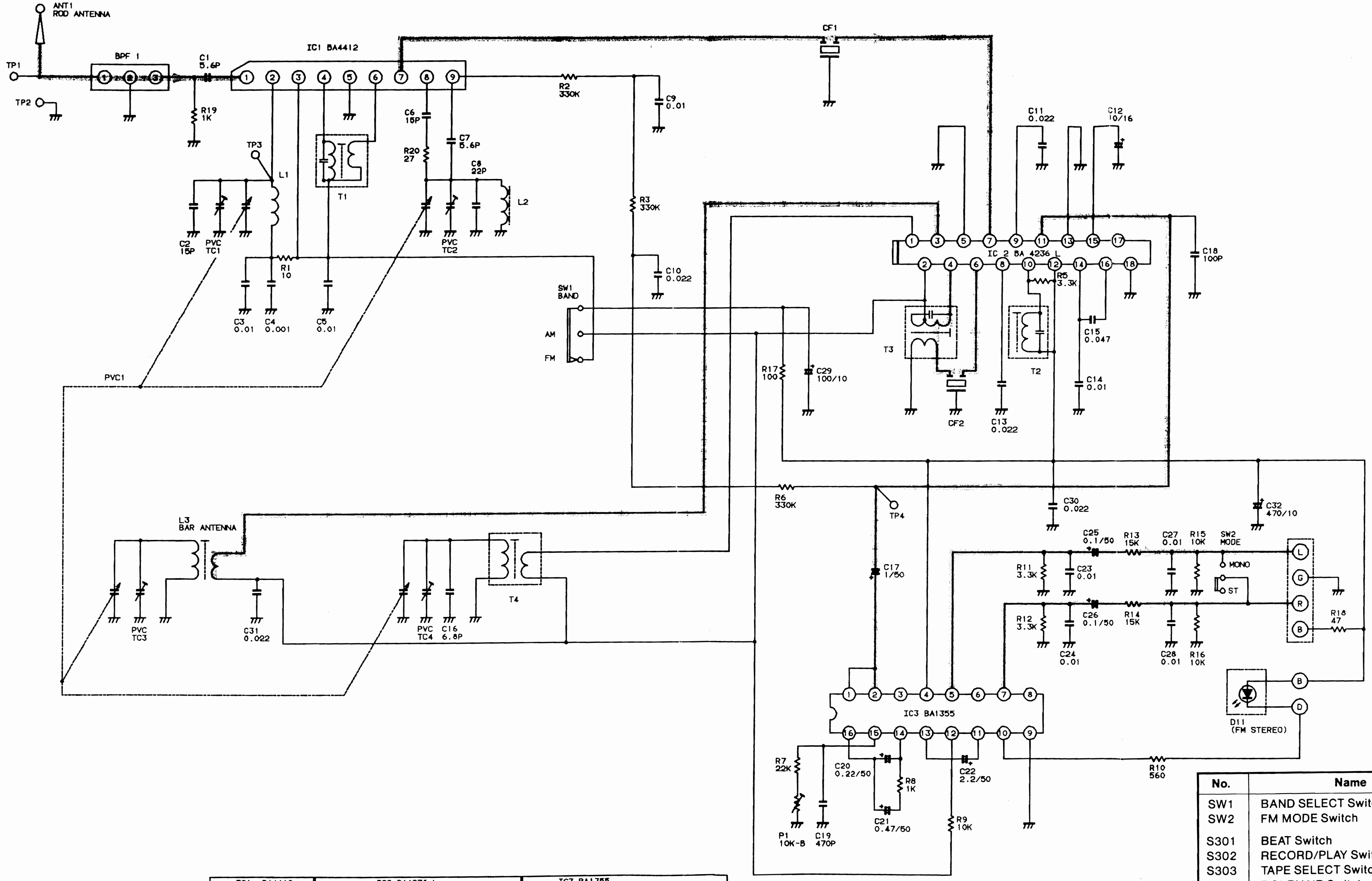
S305
REC MUTE SW
S303
TAPE SELECT SW.
NORMAL
METAL
S304
DOLBY SW
OFF
ON
BROWN
TAPE
RADIO
CD
LINE IN
S306
FUNCTION SW
CN104
VR1
Q301
Q201
Q101
Q302
Q102
Q202
IC302
IC301
L103
L203
WHITE
RED
D302
D301
D303
D304
D315
D317
F1
FUSE
L304
CN103
L303
IC303
DC-DC CONVERTER
J301
MIC JACK
J302
J303
HEADPHONE
JACK
J304
HEADPHONE
JACK
S301
BEAT SW
1
2
3
S302
S302-1
-2
-3
-4
-5
-6
-7
-8
-9
L101
L201
L301
L302
L102
P101
P102
P103
P201
P202
P203
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q104
Q105
Q106
Q204
Q205
Q206
D305
D306
D314
D316
F301
CN101
CN102
CN105
CN106

CD MAIN P.C.BOARD

(BOTTOM VIEW)


S402
AUTO REPEAT
S401
AUTO SPACE
S402
PL1 PLUG 8P
IC409
IC404
IC403
IC411
IC410
CN400
IC402
IC408
X401
D525
D526
R542
R521
R522
C481
C460
R520
R519
R541
C456
C455
C450
D521
D522
D523
Q516
D516
D524
CN405
PL2 PLUG 10P
Q512
Q501
Q503
Q504
Q502
Q505
Q514
Q507
Q515
IC401
IC407
IC405
IC406
P401
P402
P403
P404
P405
P406
L403
L405
L406
Q509
Q510
Q508
Q506
CN401
CN402
CN403
CN404
R490
C495
C446
C432

SCHEMATIC DIAGRAM (Tuner)


ANT1 ROD ANTENNA
TP1
TP2
BPF 1
C1 5.6P
R19 1K
IC1 BA4412
TP3
L1
C2 15P
PVC TC1
R1 10
C3 0.01
C4 0.001
C5 0.01
T1
C6 15P
R20 27
C7 5.6P
C8 22P
L2
PVC TC2
R2 330K
C9 0.01
R3 330K
C10 0.022
SW1 BAND
AM
FM
PVC1
CF1
C11 0.022
C12 10/16
IC 2 BA 4236 L
R5 3.3K
C18 100P
C15 0.047
T3
T2
R17 100
C29 100/10
CF2
C13 0.022
C14 0.01
R6 330K
TP4
C30 0.022
C32 470/10
L3 BAR ANTENNA
C31 0.022
PVC TC3
PVC TC4
C16 6.8P
T4
C17 1/50
C25 0.1/50
R13 15K
C27 0.01
R15 10K
SW2 MODE
MONO
ST
R11 3.3K
C23 0.01
R12 3.3K
C26 0.1/50
R14 15K
C24 0.01
C28 0.01
R16 10K
R18 47
L
G
R
B
B
D
D11 (FM STEREO)
IC3 BA1355
R7 22K
C20 0.22/50
R8 1K
C22 2.2/50
C21 0.47/50
R9 10K
R10 560
P1 10K-B
C19 470P

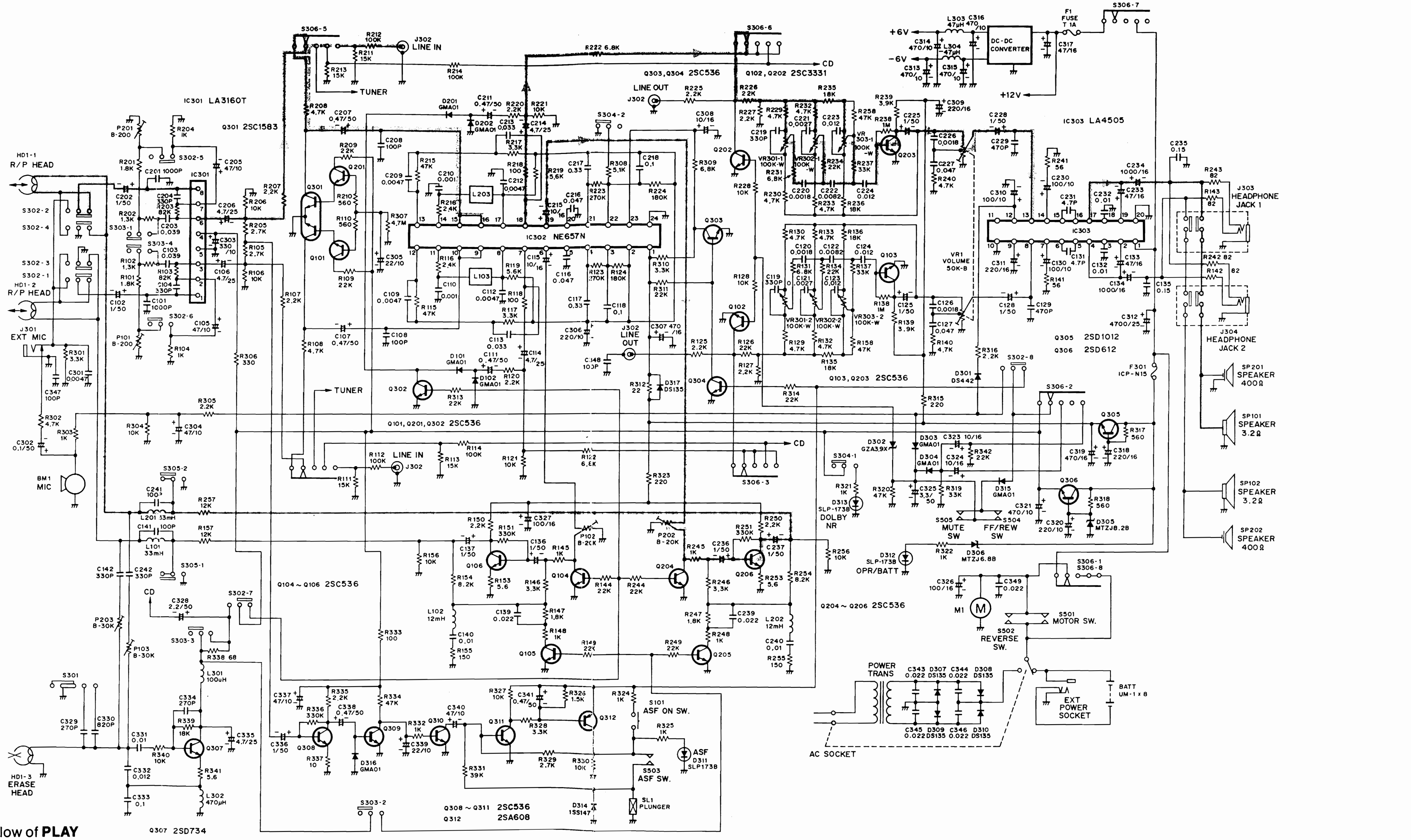
IC1 BA4412			IC2 BA4236 L						IC3 BA1355					
	AM	FM		AM	FM		AM	FM		AM	FM		AM	FM
1	0.98	0	1	0.28	6.56	10	0.82	7.24	1	1.32	1.31	9	0	0
2	4.87	0	2	0.28	6.57	11	2.14	2.06	2	1.32	1.31	10	5.49	5.92
3	4.85	0	3	0.28	6.56	12	6.80	7.24	3	1.73	1.81	11	1.77	1.79
4	4.89	0	4	0.28	6.56	13	0	0	4	6.80	7.24	12	0.28	2.89
5	0	0	5	0	0	14	5.30	5.74	5	1.28	1.40	13	1.77	0.88
6	4.85	0	6	5.87	6.31	15	1.15	0	6	4.22	4.23	14	1.80	1.81
7	4.11	0	7	5.91	6.30	16		1.32	7	1.49	1.62	15	1.62	0
8	4.84	0	8	5.87	6.31	17	0	0	8	4.22	4.23	16	1.80	1.80
9	1.93	0	9	5.87	6.31	18	0	0						

No.	Name	Position
SW1	BAND SELECT Switch	FM
SW2	FM MODE Switch	STEREO
S301	BEAT Switch	1
S302	RECORD/PLAY Switch	PLAY
S303	TAPE SELECT Switch	NORMAL
S304	DOLBY NR Switch	OFF
S305	REC MUTE Switch	OFF
S306	FUNCTION Switch	TAPE
S501	MOTOR Switch	OFF
S502	REVERSE Switch	OFF
S503	ASF Switch	OFF
S504	FF/REW Switch	OFF
S505	MUTE Switch	OFF

──────▶ Signal flow of **FM**

– – – – ▶ Signal flow of **AM**

SCHEMATIC DIAGRAM (Amplifier)


IC301 LA3160T
Q301 2SC1583
IC302 NE657N
IC303 LA4505
Q101,Q201,Q302 2SC536
Q303,Q304 2SC536
Q102,Q202 2SC3331
Q103,Q203 2SC536
Q104～Q106 2SC536
Q204～Q206 2SC536
Q305 2SD1012
Q306 2SD612
Q307 2SD734
Q308～Q311 2SC536
Q312 2SA608
HD1-1 R/P HEAD
HD1-2 R/P HEAD
HD1-3 ERASE HEAD
J301 EXT MIC
BM1 MIC
J302 LINE IN
J302 LINE OUT
TUNER
CD
J303 HEADPHONE JACK 1
J304 HEADPHONE JACK 2
SP201 SPEAKER 400Ω
SP101 SPEAKER 3.2Ω
SP102 SPEAKER 3.2Ω
SP202 SPEAKER 400Ω
DC-DC CONVERTER
F1 FUSE T 1A
+6V
-6V
+12V
VR1 VOLUME 50K-B
DOLBY NR
MUTE SW
FF/REW SW
OPR/BATT
M1
S501 MOTOR SW.
S502 REVERSE SW.
POWER TRANS
AC SOCKET
EXT POWER SOCKET
BATT UM-1 x 8
S101 ASF ON SW.
ASF
S503 ASF SW.
SL1 PLUNGER
F301 ICP-N15

Signal flow of **PLAY**

Signal flow of **RECORD**

IC PIN NUMBERS DC VOLTAGES																	
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC302	NE657	10.2V	5.1V	5.0V	4.9V	5.1V	5.2V	5.3V	5.1V	5.0V	5.0V	5.1V	5.1V	5.1V	5.1V	5.0V	5.0V
		17	18	19	20	21	22	23	24								
		5.1V	5.2V	5.2V	5.1V	4.9V	5.0V	10.2V	0V								

IC PIN NUMBERS DC VOLTAGES																	
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC303	LA4505	11.3V	10.1V	0.6V	5.4V	5.6V	0.8V	1.2V	0V	10.9V	0V	0.5V	0.9V	0V	1.2V	0.8V	5.5V
		17	18	19	20												
		5.3V	0.6V	10.1V	0V												

IC PIN NUMBERS DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q305	2SD1012	11.3V	11.3V	10.6V
Q306	2SD612	8.1V	11.3V	7.5V
•Q307	2SD734	0.1V	0.1V	0V

(• = REC Mode)

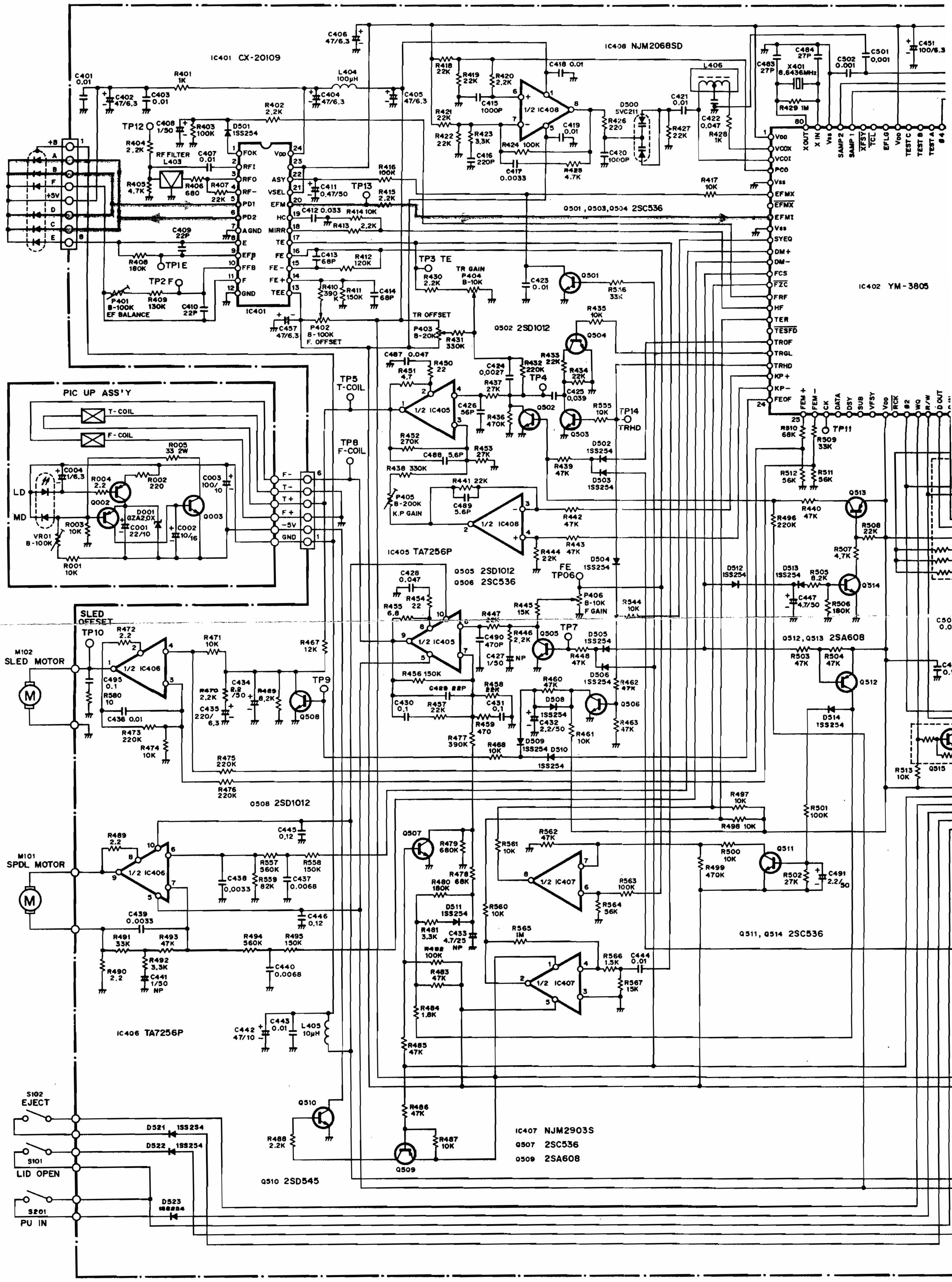
IC PIN NUMBERS DC VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC301	LA3160	1.3V	0.8V	2.7V	6.6V	0V	2.6V	0.8V	1.3V

NOTES:

1. All resistors values are indicated in "ohm" ($K=10^3$, $M=10^6$).
2. All capacitors values are indicated in "μF" ($P=10^{-12}$).
3. All voltages indicated on the schematics are measured under the following conditions.
   - a. Use a V.T.V.M.
   - b. All voltages ±10 % with respect to chassis grour
   - c. No signals at input terminals.
   - d. AC input at 120 volts 60 Hz.
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

SCHEMATIC D


IC401 CX-20109
IC408 NJM2068SD
IC402 YM-3805
IC405 TA7256P
IC406 TA7256P
IC407 NJM2903S
Q501, Q503, Q504 2SC536
Q502 2SD1012
Q505 2SD1012
Q506 2SC536
Q508 2SD1012
Q512, Q513 2SA608
Q511, Q514 2SC536
Q507 2SC536
Q509 2SA608
Q510 2SD545
PIC UP ASS'Y
T-COIL
F-COIL
LD
MD
VR01 B-100K
SLED OFFSET
M102 SLED MOTOR
M101 SPDL MOTOR
S102 EJECT
S101 LID OPEN
S201 PU IN
TP12
TP1E
TP2F
TP13
TP3 TE
TP4
TP5 T-COIL
TP8 F-COIL
TP14 TRHD
TP11
FE TP06
TP7
TP9
TP10
RF FILTER L403
P401 B-100K EF BALANCE
P402 B-100K F. OFFSET
P403 B-20K TR OFFSET
P404 B-10K TR GAIN
P405 B-200K K.P GAIN
P406 B-10K F GAIN
X401 8.6436MHz
L404 100μH
L405 10μH
L406
D500 SVC211
D501 1SS254
D502 1SS254
D503 1SS254
D504 1SS254
D505 1SS254
D506 1SS254
D512 1SS254
D513 1SS254
D514 1SS254
D521 1SS254
D522 1SS254
D523 1SS254
VDD
XOUT
X IN
VSS
SAMP 2
SAMP 1
XFSY
TCL
EFLG
TEST C
TEST B
TEST A
VCOX
VCOI
PCO
EFMX
EFMI
SYEQ
DM+
DM−
FCS
FZC
FRF
HF
TER
TESFD
TROF
TRGL
TRHD
KP+
KP−
FEOF
FEM+
FEM−
CK
DATA
DSY
SUB
VFSY
RCK
WQ
D OUT
FOK
RFI
RFO
RF−
PD1
PD2
AGND
EFB
FFB
GND
ASY
VSEL
EFM
HC
MIRR
TE
FE
FE−
FE+
TEE
+B
+5V
−5V

IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC401	CX20109	−1.1V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	−6.1V	0V	0V	0V
		17	18	19	20	21	22	23	24								
		0V	0V	−3.1V	4.1V	5.0V	0V	5.0V	6.0V								

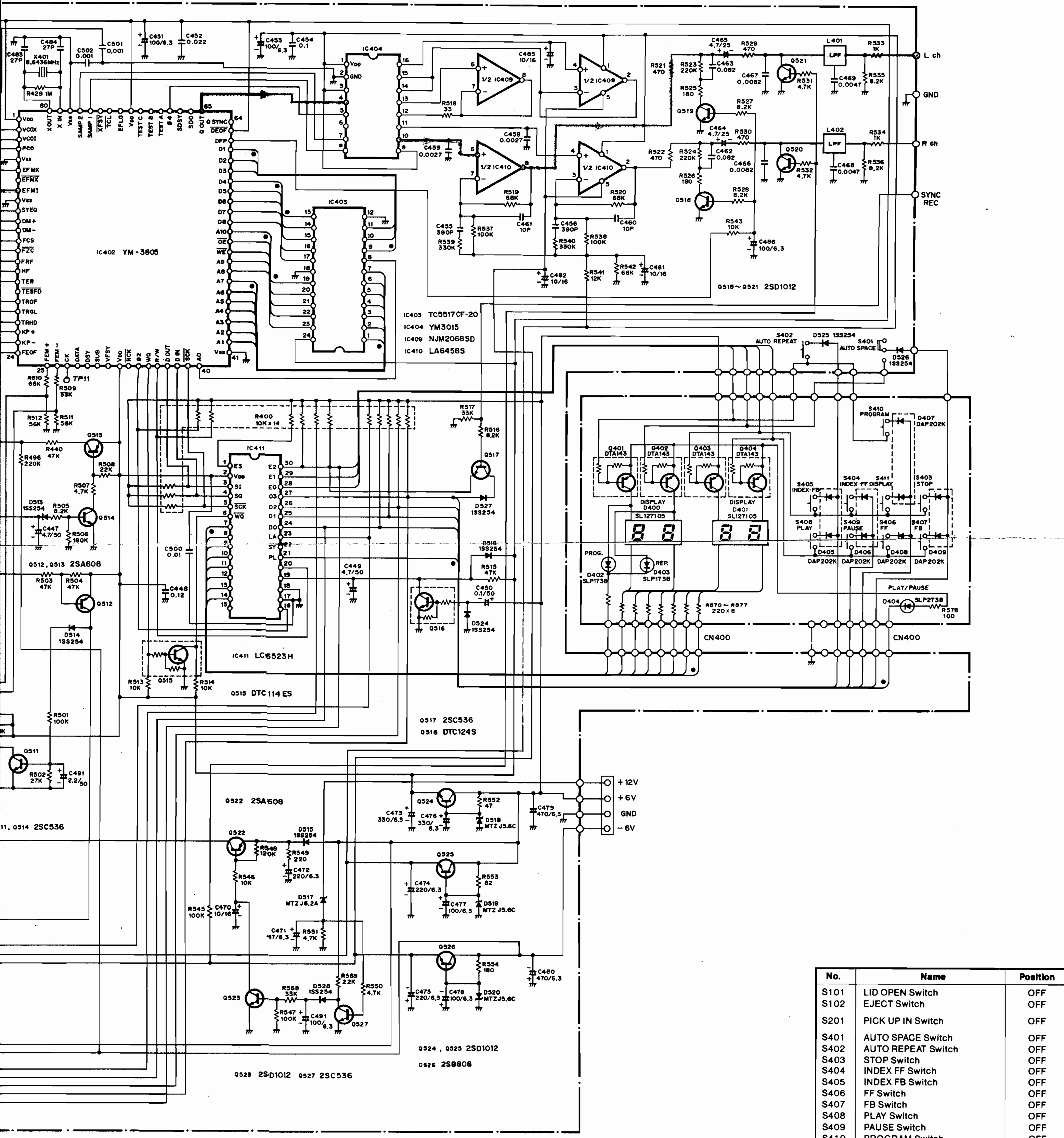
IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC403	TC5517	2.4V	2.5V	2.5V	2.4V	2.4V	2.4V	2.5V	2.5V	4.1V	1.1V	3.9V	0V	3.8V	3.8V	1.0V	1.0V
		17	18	19	20	21	22	23	24								
		1.0V	0V	–	2.8V	4.6V	2.3V	2.5V	5.0V								

IC PIN NUMBERS D

SYMBOL No.	DEVICE	1	2	3	4	5	6	7
IC402	YM3805	5.0V	2.2V	2.2V	2.5V	0V	5.0V	0V
		17	18	19	20	21	22	23
		−0.5V	4.9V	0V	4.9V	0V	0V	0V
		33	34	35	36	37	38	39
		5.0V	1.7V	0V	0V	0V	5.0V	5.0V
		49	50	51	52	53	54	55
		0V	2.2V	4.6V	2.8V	–	1.0V	1.0V
		65	66	67	68	69	70	71
		0V	0V	2.4V	2.0V	4.9V	4.9V	4.9V

SCHEMATIC DIAGRAM (CD)


IC402 YM-3805
IC403 TC5517CF-20
IC404 YM3015
IC409 NJM2068SD
IC410 LA6458S
IC411 LC6523H
X401 8.6436MHz
TP11
L ch
GND
R ch
SYNC REC
Q518~Q521 2SD1012
Q512, Q513 2SA608
Q515 DTC114ES
Q517 2SC536
Q516 DTC124S
Q511, Q514 2SC536
Q522 2SA608
Q523 2SD1012 Q527 2SC536
Q524, Q525 2SD1012
Q526 2SB808
Q401 DTA143
Q402 DTA143
Q403 DTA143
Q404 DTA143
DISPLAY D400 SL127105
DISPLAY D401 SL127105
PROG.
REP.
D402 SLP173B
D403 SLP173B
PLAY/PAUSE
D404 SLP273B
AUTO REPEAT
AUTO SPACE
PROGRAM
INDEX-FB
INDEX-FF
DISPLAY
STOP
PLAY
PAUSE
FF
FB
CN400
+12V
+6V
GND
−6V
R400 10K × 14
R870 ~ R877 220 × 8

No.	Name	Position
S101	LID OPEN Switch	OFF
S102	EJECT Switch	OFF
S201	PICK UP IN Switch	OFF
S401	AUTO SPACE Switch	OFF
S402	AUTO REPEAT Switch	OFF
S403	STOP Switch	OFF
S404	INDEX FF Switch	OFF
S405	INDEX FB Switch	OFF
S406	FF Switch	OFF
S407	FB Switch	OFF
S408	PLAY Switch	OFF
S409	PAUSE Switch	OFF
S410	PROGRAM Switch	OFF
S411	DISPLAY Switch	OFF

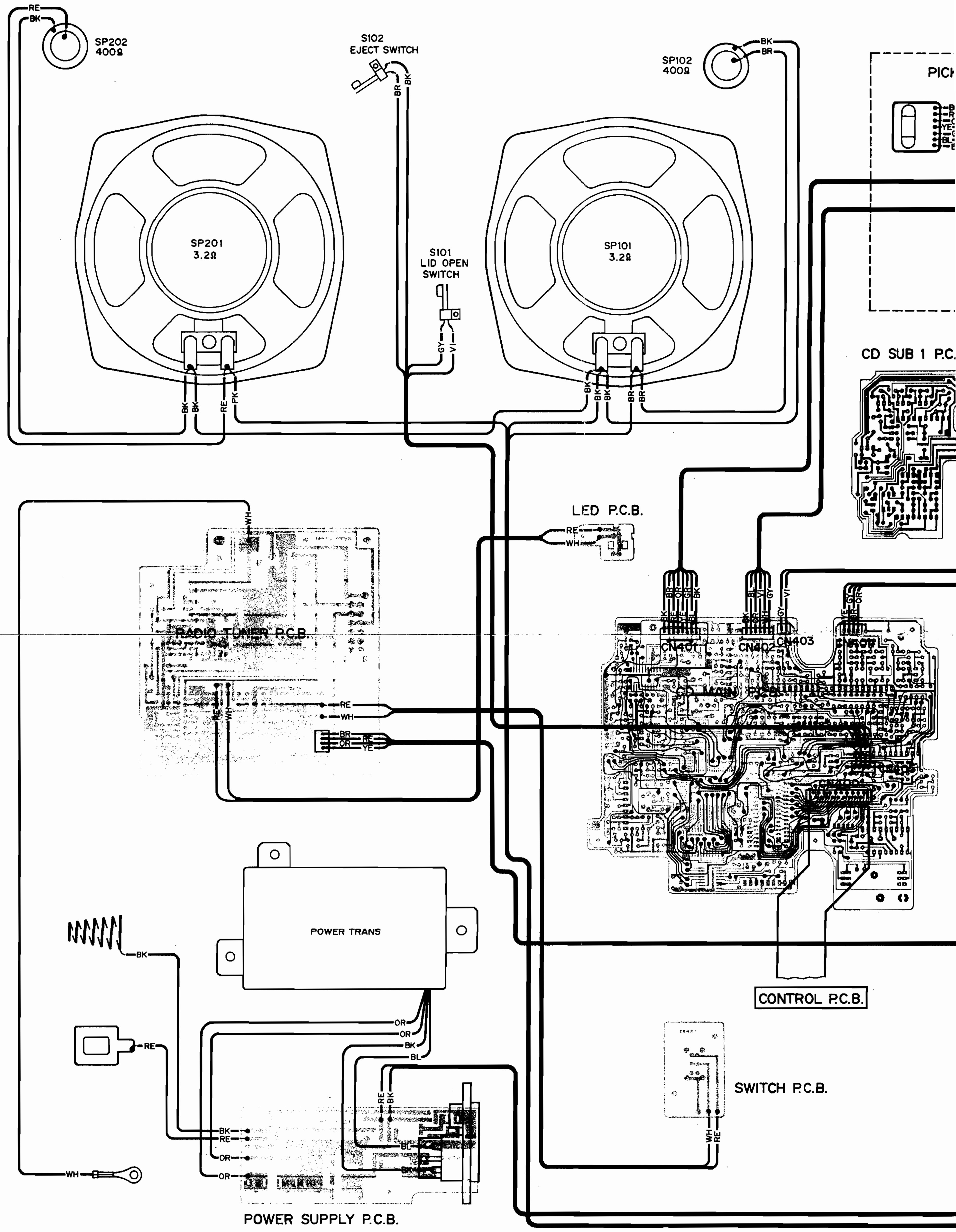
IC PIN NUMBERS DC VOLTAGES

2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2.2V	2.2V	2.5V	0V	5.0V	0V	4.1V	0V	0V	0V	0V	0V	5.0V	0V	0V
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
4.9V	0V	4.9V	0V	0V	0V	4.9V	0V	0V	1.9V	1.6V	0.3V	0V	0.2V	5.0V
34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1.7V	0V	0V	0V	5.0V	5.0V	2.5V	0V	2.5V	2.5V	2.4V	2.4V	2.5V	2.4V	2.4V
50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
2.2V	4.6V	2.8V	–	1.0V	1.0V	1.0V	3.8V	3.8V	0V	0V	0V	5.0V	5.0V	2.5V
66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
0V	2.4V	2.0V	4.9V	4.9V	4.9V	5.0V	3.3V	4.9V	4.9V	1.0V	1.0V	0V	2.3V	1.9V

IC PIN NUMBERS DC VOLTAGES

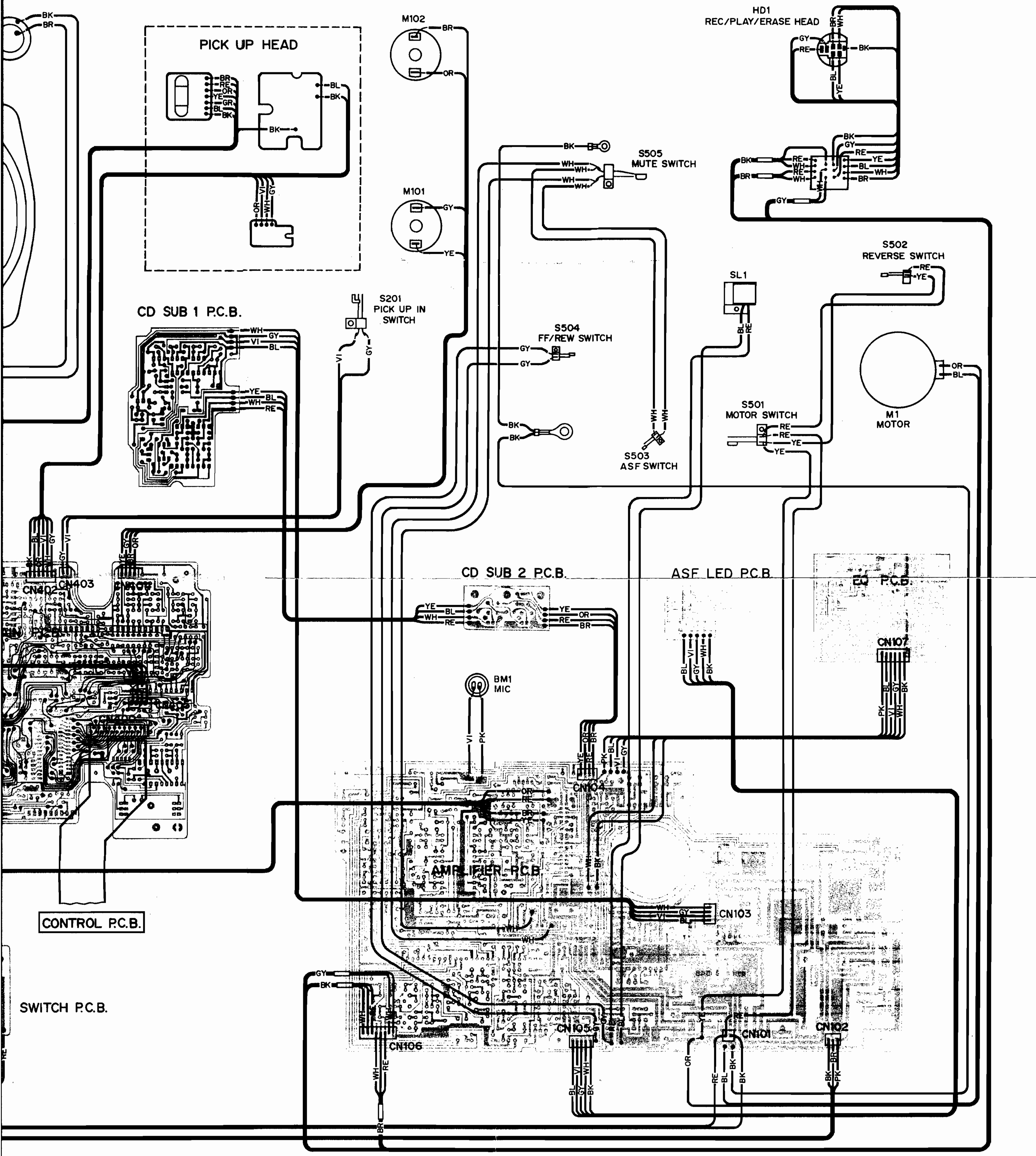
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC404	YM3015	0V	0V	0V	0V	0V	0V	1.0V	1.0V	5.9V	3.0V	3.0V	3.0V	3.0V	3.0V	3.0V	3.0V
IC405	TA7256P	0V	0V	0V	0V	−11.7V	0V	0V	0V	0V	11.3V						
IC406	TA7256P	0V	0V	0V	0V	−11.7V	0V	0V	0V	0V	11.2V						
IC407	NJM2903S	6.0V	5.0V	−5.0V	0V	−6.1V	0V	0V	−6.1V	5.9V							
IC408	NJM2068	5.9V	2.5V	2.5V	2.5V	−6.1V	0V	0V	0V	5.9V							
IC409	NJM2068	5.9V	3.0V	3.0V	3.0V	−6.0V	3.0V	3.0V	3.0V	5.9V							
IC410	LA6458	5.9V	3.0V	3.0V	3.0V	−6.0V	3.0V	3.0V	3.0V	5.9V							

WIRING DIAGR



RE
BK
SP202
400Ω
S102
EJECT SWITCH
BR
BK
SP102
400Ω
BK
BR
PICK
SP201
3.2Ω
S101
LID OPEN
SWITCH
GY
VI
SP101
3.2Ω
CD SUB 1 P.C.
BK
BK
RE
PK
BK
BK
BK
BR
BR
LED P.C.B.
RE
WH
WH
RADIO TUNER P.C.B.
RE
WH
RE
WH
BR
OR
RE
YE
BR
OR
GR
BK
BL
VI
GY
VI
CN401
CN402
CN403
POWER TRANS
BK
RE
OR
OR
BK
BL
RE
BK
BK
RE
OR
OR
WH
BL
BK
CONTROL P.C.B.
SWITCH P.C.B.
WH
RE
POWER SUPPLY P.C.B.

WIRING DIAGRAM



PICK UP HEAD
M102
M101
HD1
REC/PLAY/ERASE HEAD
S505
MUTE SWITCH
S502
REVERSE SWITCH
SL1
S201
PICK UP IN
SWITCH
CD SUB 1 P.C.B.
S504
FF/REW SWITCH
S501
MOTOR SWITCH
M1
MOTOR
S503
ASF SWITCH
CN402
CN403
CD SUB 2 P.C.B.
ASF LED P.C.B.
EQ P.C.B.
CN107
BM1
MIC
CN104
AMPLIFIER P.C.B.
CN103
CONTROL P.C.B.
SWITCH P.C.B.
CN106
CN105
CN101
CN102
BK
BR
RE
OR
YE
GR
BL
GY
WH
VI
PK